

SERVICE MANUAL

SOLID-STATE AM/FM STEREO TUNER AMPLIFIER

SANSUI 1000X

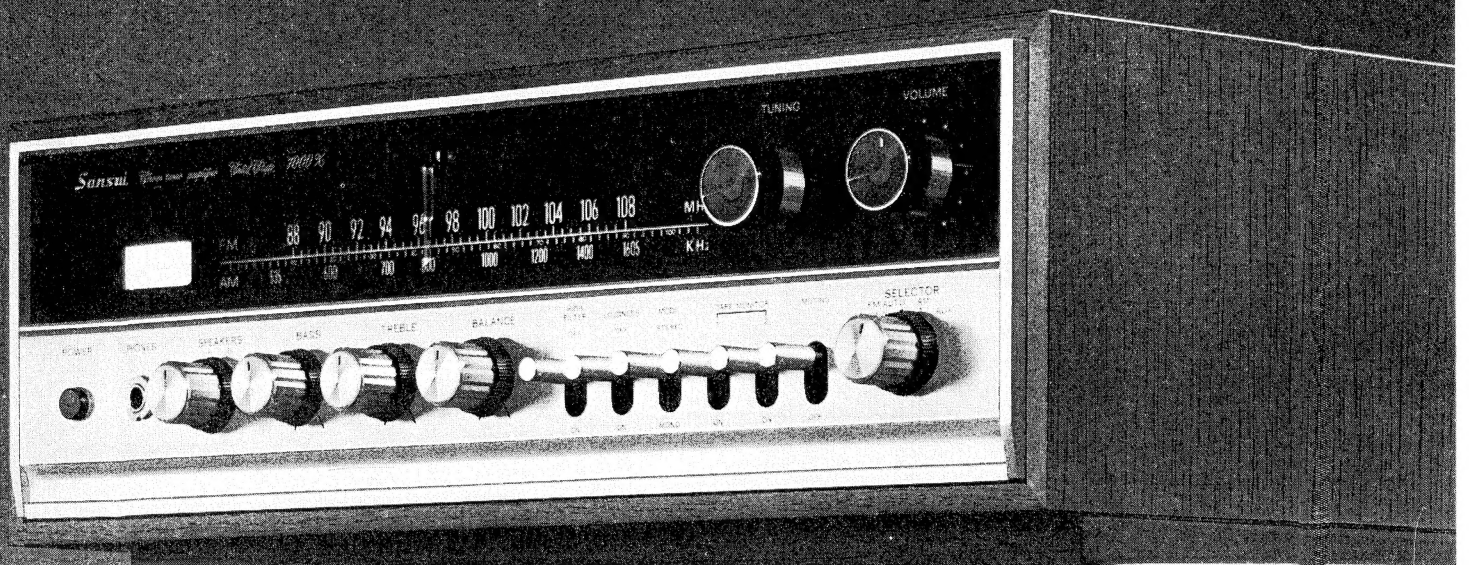


Sansui

SANSUI ELECTRIC CO., LTD.

CONTENTS

GENERAL TROUBLESHOOTING CHART	3, 4
CUSTOM MOUNTING	5, 6
DISASSEMBLY PROCEDURE	7
BLOCK DIAGRAM	8
ALIGNMENT	9, 10, 11, 12, 13, 14
SCHEMATIC DIAGRAM	15, 16
PRINTED CIRCUIT BOARDS AND PARTS LIST	
.....	17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28
OTHER PARTS AND THEIR POSITION ON CHASSIS	
.....	29, 30



GENERAL TROUBLESHOOTING CHART

If the amplifier is otherwise operating satisfactorily, the more common causes of trouble may generally be attributed to the following:

1. Incorrect connections or loose terminal contacts. Check the speakers, record player, tape recorder, antenna and line cord.
2. Improper operation. Before operating any audio com-

ponent, be sure to read the manufacturer's instructions.

3. Improper location of audio components. The proper positioning of components, such as speakers and turntable, is vital to stereo.

4. Defective audio components.

The following are some other common causes of malfunction and what to do about them:

PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
AM, FM or MPX reception	A. Constant or intermittent noise heard at times or in a certain area	<ul style="list-style-type: none"> * Discharge or oscillation caused by electrical appliances, such as fluorescent lamp, TV set, D.C. motor, rectifier or oscillator * Natural phenomena, such as atmospherics, statics or thunderbolts * Insufficient antenna input due to ferroconcrete wall or long distance from the station * Wave interference from other electrical appliances 	<ul style="list-style-type: none"> * Attach a noise limiter to the electrical appliance causing the noise, or attach it to the amplifier's power source * Install an outdoor antenna and ground the amplifier to raise the signal-to-noise ratio * Reverse the power cord plug-receptacle connections * If the noise occurs at a certain frequency, attach a wave trap to the ANT. input * Keep the set at a proper distance from other electrical appliances
	B. The needle of the tuning meter does not move sharply	* Receiver is located in a weak signal area	* Place the set to receive maximum signal strength
	C. The zero point of the meter diverges much	* Regional difference in field intensity.	* The unit is not at fault
AM reception	A. Noise heard at a particular time of a day, in a certain area or over part of dial	* Due to the nature of AM broadcasts	<ul style="list-style-type: none"> * Install the antenna for maximum antenna efficiency. See "ANTENNA" in the operating instructions * In some cases, the noise can be eliminated by grounding the amplifier or reversing the power cord plug-receptacle connections
	B. High-frequency noise	<ul style="list-style-type: none"> * Adjacent-channel interference or beat interference * TV set too close to audio system 	<ul style="list-style-type: none"> * Although such noise cannot be eliminated by the amplifier, it is advisable to adjust the TREBLE control from midpoint to left and switch on the HIGH FILTER * Keep the TV set at a proper distance from the audio system
FM reception	A. Noisy	* Poor noise limiter effect or too low S/N ratio due to insufficient antenna input	<ul style="list-style-type: none"> * Install the antenna (supplied) for maximum signal strength * If this does not prove effective, use an outdoor antenna designed exclusively for FM. When you use a TV antenna for both TV and FM with a splitter, make sure TV reception is not affected * An excessively long antenna may cause noise
	Note: FM reception is affected considerably by transmission conditions of stations: power and antenna efficiency. As a result, you may receive one station quite well while receiving another station poorly		

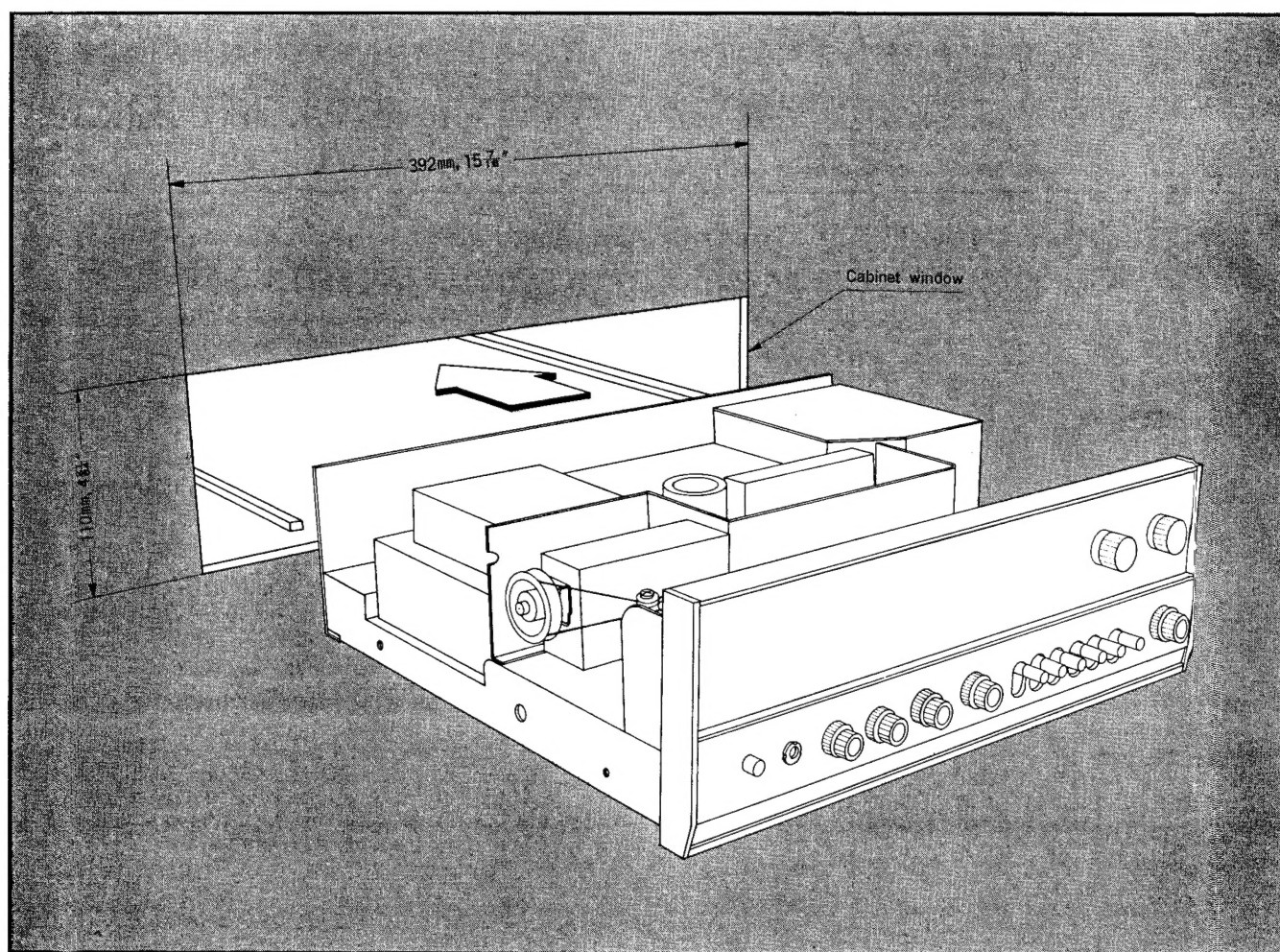
PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
FM reception (cont'd)	B. A series of pops is heard	* Ignition noise caused by an automobile engine	* Install the antenna and its lead-in wire in proper distance from the road or raise the antenna input as described above
	C. Tuning noise between stations	* This results from the nature of the FM reception. As the station signal becomes weak, the noise limiter effect is decreased, and the amplification of the limiter, in turn, is enlarged, generating a noise	* Turn the MUTING switch on. It reduces the sensitivity, and therefore it should be used sparingly
FM-MPX reception	A. Noise heard during FM-MPX reception while not heard during FM mono reception	* Weaker signal because the service area of the FM-MPX broadcast is only half that of the FM mono broadcast	* Install the antenna for maximum antenna input * Switch on the HIGH FILTER and/or turn the TREBLE control from midpoint, left
	B. Clearness of channel separation is decreased during reception	* Excess heat	* Circulation of air is important to the amplifier. Be sure that air is flowing under the amplifier
	C. The stereo indicator blinks on and off	* Interference	* The indicator is not at fault. Adjust VR ₄₀₁
	D. The stereo indicator blinks on and off even though stereo station is not received	* Interference	* The indicator is not at fault. Adjust VR ₄₀₁
Record playing or tape playback	A. Hum or howling	* Record player placed directly on speaker * Wire other than shielded wire used * Loose terminal contact * Shielded wire too close to line cord, fluorescent lamp or other electrical appliances * Nearby amateur radio station or TV transmission antenna	* Place a cushion between the player and the speaker box or place them away from each other * The connecting shielded wire should be as short as possible * Turn the BASS control from midpoint to left * Consult the authorized SANSUI Service Station
	B. Surface noise	* Worn or old record * Worn stylus * Stylus dusty * Improper stylus pressure * Worn playback head	* Switch on the HIGH FILTER and turn the TREBLE control from midpoint to left * Clean or replace the stylus * Replace the playback head.
All stereo programs	BALANCE control is not at midpoint when equal sound comes from left and right channels	* It is important to adjust for equal sound from both channels. It should not always be set to the midpoint	* Set the MODE switch to MONO and then set the BALANCE control to a position where equal sound comes from both channels

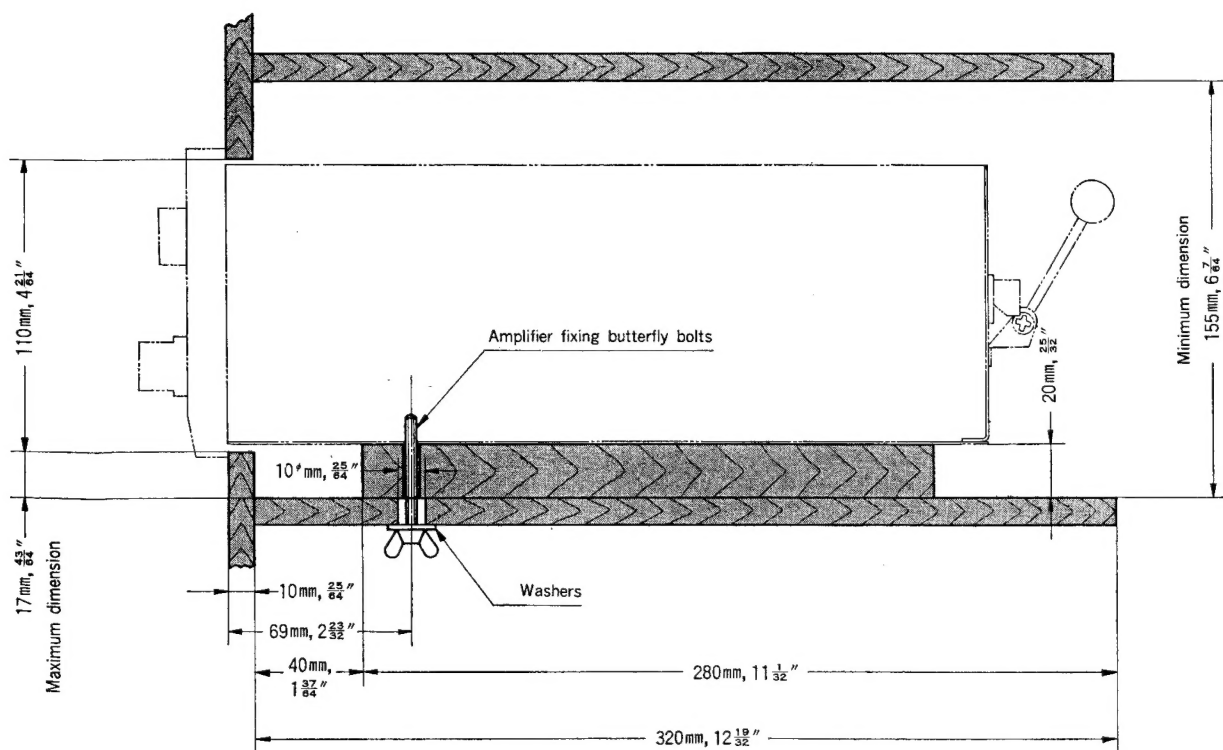
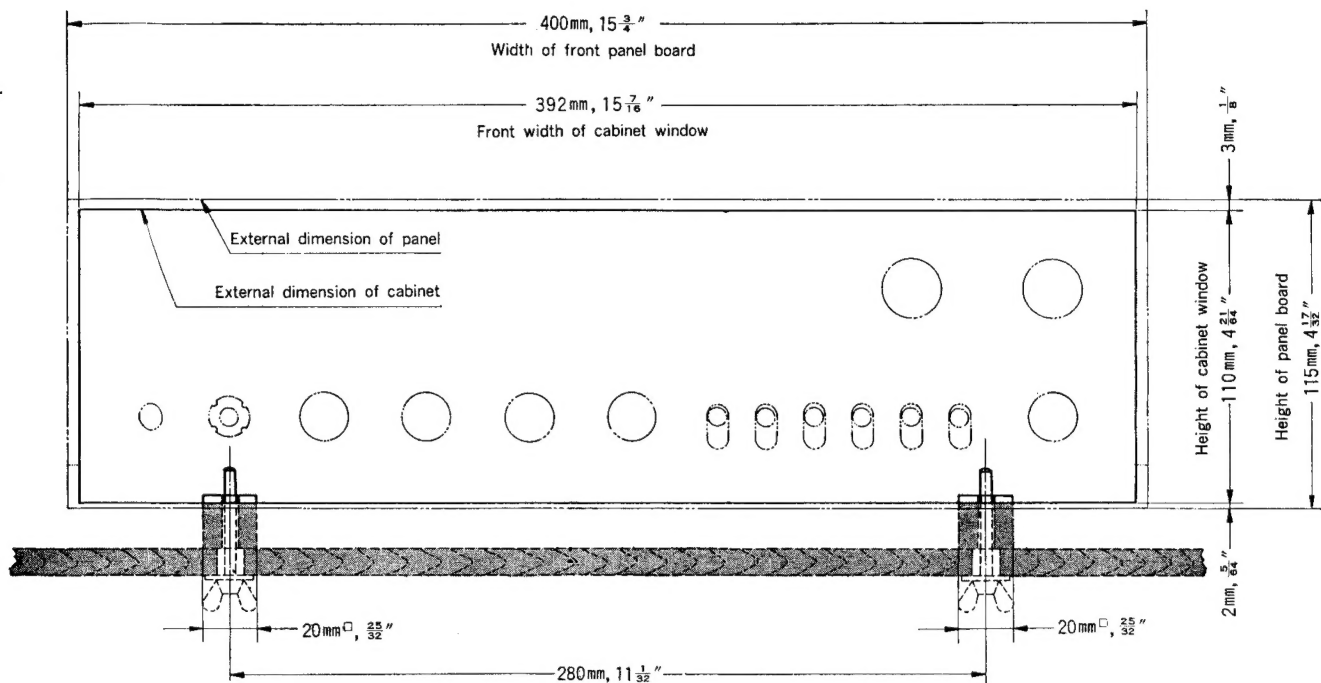
CUSTOM MOUNTING

How to Install the Amplifier in a Wooden Cabinet

1. Make a cabinet window of 392mm or $15\frac{7}{16}$ " in width and 110mm or $4\frac{21}{64}$ " in height.
2. Place two square pieces of wood ($20 \times 20 \times 210$ mm or $\frac{25}{32}" \times \frac{25}{32}" \times 8\frac{17}{64}"$) for supporting the amplifier in the bottom board of the cabinet.
3. Cut two holes four attachment bolts in the bottom board of the cabinet.
4. Remove the amplifier from the wood case (Refer to the section entitled "DISASSEMBLY PROCEDURE").
5. Place the amplifier in position through the cabinet window.
6. Make sure the amplifier is in position, then put the washers in butterfly bolts (4×40 mm) and fix the amplifier to the cabinet with the butterfly bolts.

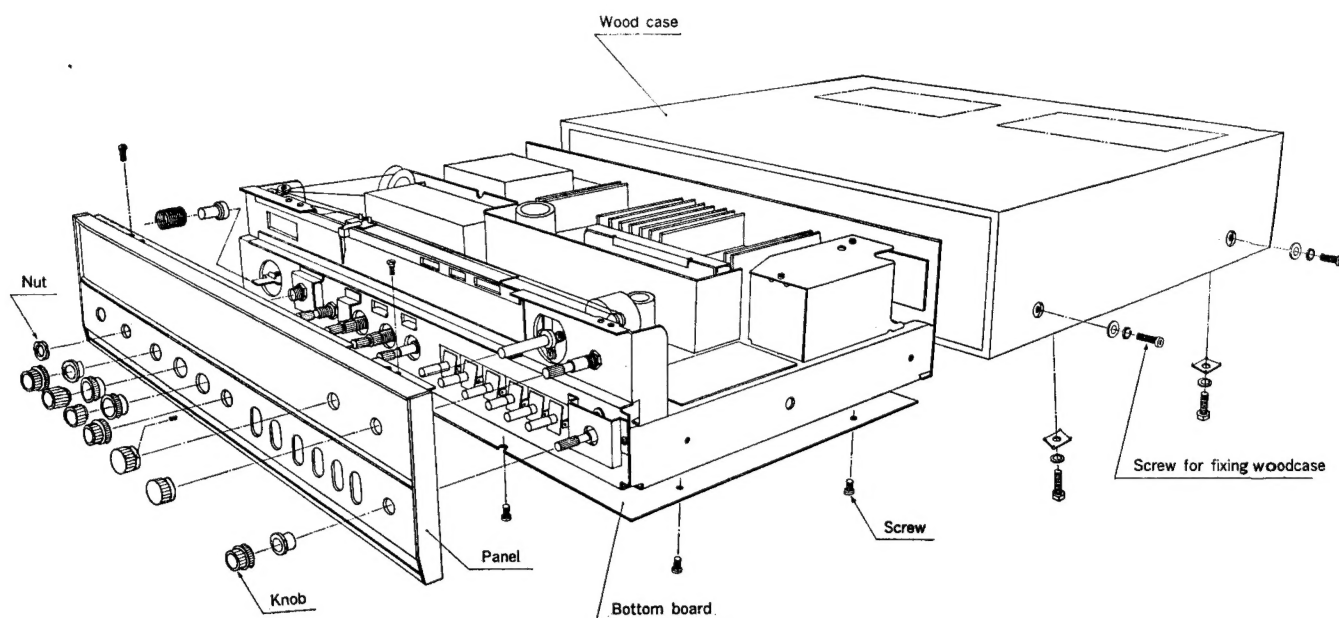
Note: When the amplifier is built into the custom cabinet, the wood case assembly including screws and washers is not used. Retain it for future use.



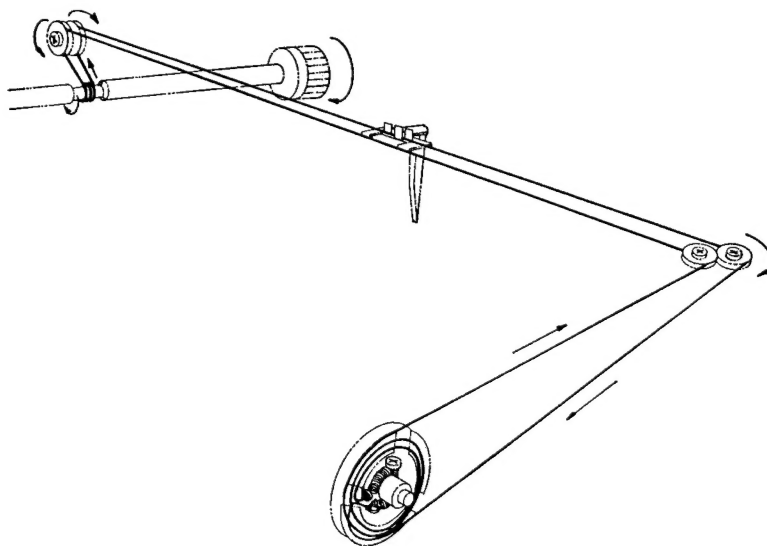


DISASSEMBLY PROCEDURE

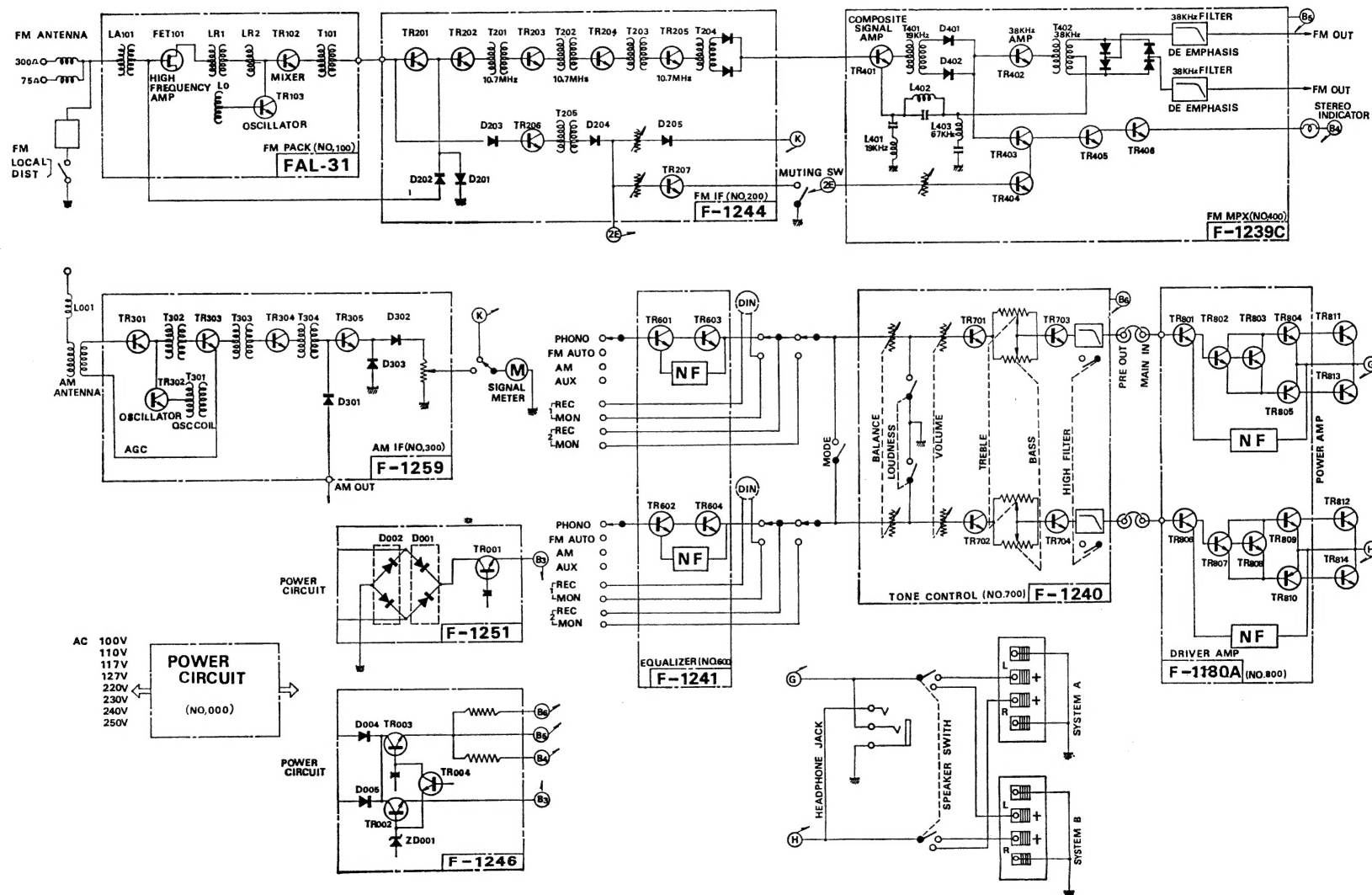
REMOVING THE FRONT PANEL, WOOD CASE AND BOTTOM PLATE



DIAL MECHANISM

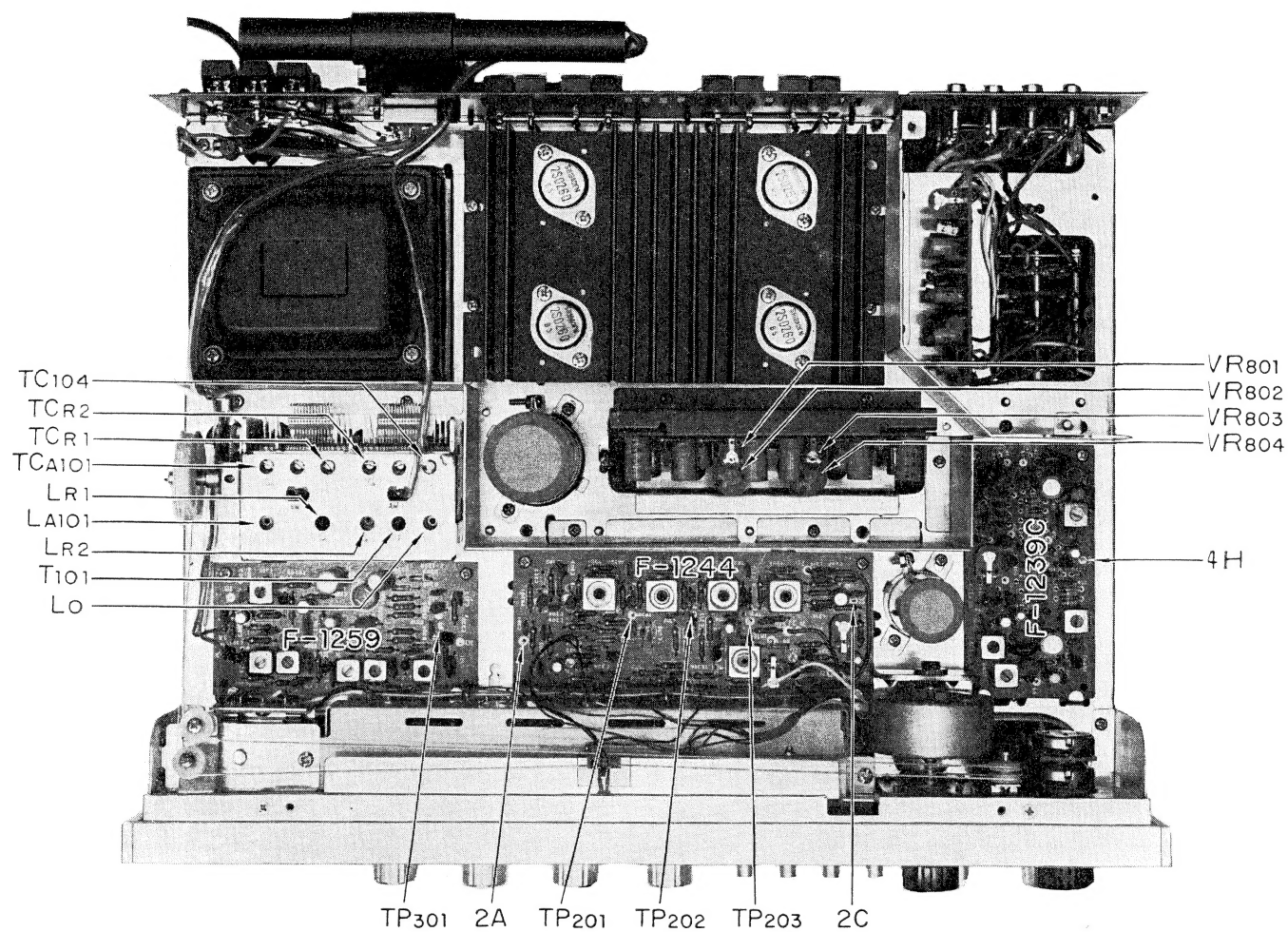


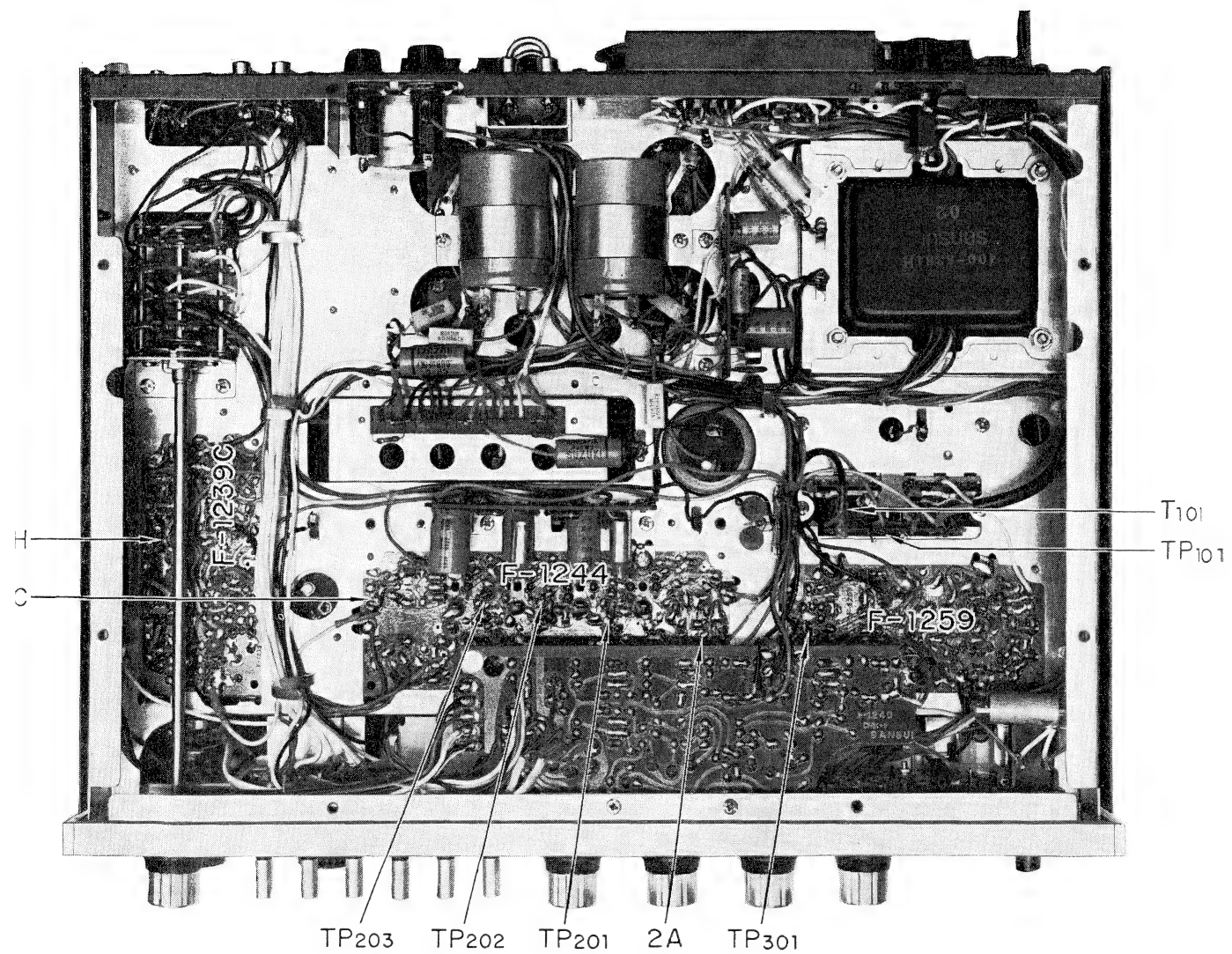
BLOCK DIAGRAM



ALIGNMENT

TEST POINTS





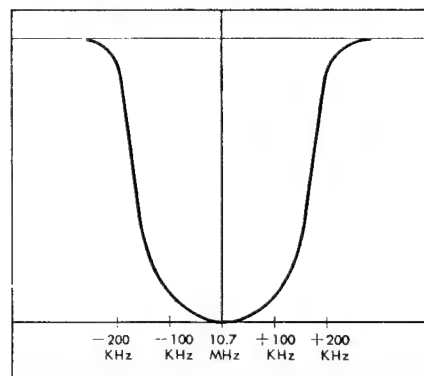
ALIGNMENT

FM ALIGNMENT PROCEDURE

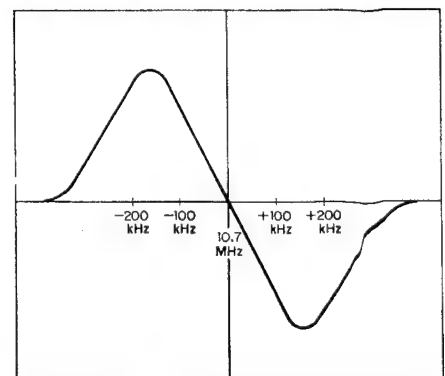
NOTE: To align, set the EM signal generator level to minimum turn tuning gang fully, center carrier wave, and set pointer to reference mark.

STEP	ALIGN	GENERATOR	FEED SIGNAL	OUTPUT INDICATOR	DIAL SETTING	ADJUST	ADJUST FOR
1.	IF Trans-former	10.7 MHz ± 200 kHz	Sweep signal is sent to TP ₁₀₁ via the 10pF ceramic capacitor	Oscilloscope is connected to TP ₂₀₁ , TP ₂₀₂ and TP ₂₀₃ via the 0.02 μ F ceramic capacitor		Primary and secondary sides of T ₂₀₁ , T ₂₀₂ , and T ₂₀₃	Best I.F. wave form
2.	Discriminator	10.7 MHz ± 200 kHz	Sweep signal is sent to 2A via the 0.02 μ F ceramic capacitor	Oscilloscope is connected to 2C via the 0.05 μ F capacitor		FM Discriminator T ₂₀₄ primary and secondary	S curve
3.	O.S.C	88 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	88 MHz	O.S.C. coil L ₀	Maximum
4.	O.S.C	108 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	108 MHz	O.S.C trimmer TC ₁₀₄	Maximum
5.	Repeat 3&4						
6.	RF Amp. Circuit	90 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	90 MHz	Antenna Coil LA ₁₀₁ , LR ₁ and LR ₂	Maximum
7.	RF Amp. Circuit	106 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	106 MHz	Trimmer TCA ₁₀₁ , TC _{R1} and TC _{R2}	Muximum
8.	Repeat 6 & 7						

FM IF CHARACTERISTIC



FM DISCRIMINATOR CHARACTERISTIC



FM MULTIPLEX ALIGNMENT PROCEDURE

1. Do not attempt to align the Multiplex Circuit unless the following equipment is available:

a. Multiplex Stereo Generator b. Oscilloscope c. AC. V.T.V.M. d. Audio Oscillator e. FM Signal Generator

STEP	ALIGN	GENERATOR	FEED SIGNAL	OUTPUT INDICATOR	ADJUST	ADJUST FOR
1.	19kHz Trap	19 kHz Audio Signal	Connect to 4A	V.T.V.M. at 4G	L ₄₀₁	Minimum
2.	67kHz Trap	67 kHz Audio Signal	Connect to 4A	V.T.V.M. at 4G	L ₄₀₃	Minimum
3.	19kHz Transformer	FM Signal Gen. Modulated 30% by STEREO Gen. sub-channel	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at 4H	T ₄₀₁	Maximum
4.	38kHz Transformer	FM Signal Gen. Modulated 30% by STEREO Gen.	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at 4H	T ₄₀₂	Maximum
5.	38 kHz Transformer and Separation VR	FM Signal Gen. Modulated 30% by STEREO Signal Gen. channel-L	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at output load channel-R	T ₄₀₂ within 1/4 turn and Separation VR (VR ₆₀₁)	Channel-R Minimum

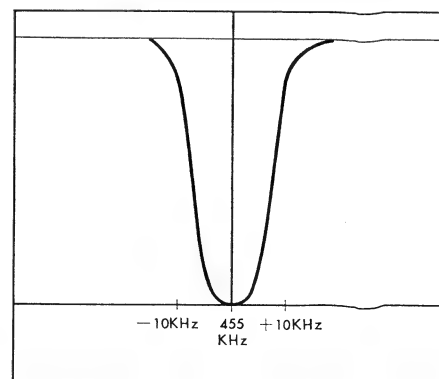
ALIGNMENT

AM ALIGNMENT PROCEDURE

NOTE: To align, set AM Signal Generator level to minimum.

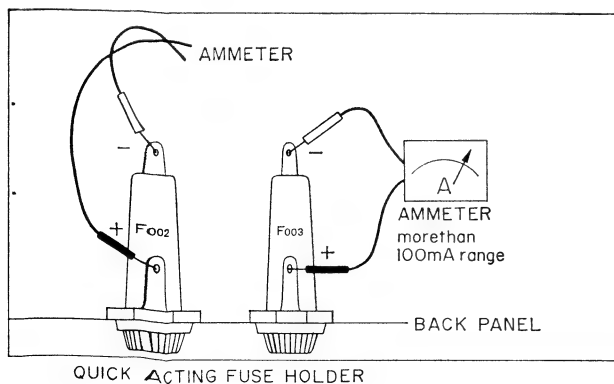
STEP	ALIGN	GENERATOR	FEED SIGNAL	OUTPUT INDICATOR	DIAL SETTING	ADJUST	ADJUST FOR
1.	I.F. Trasformer	455 kHz ± 30 kHz Sweep-generator	Antenna terminals	Oscilloscope and V.T.V.M. is connected to TP ₃₀₁		Primary and secondary sides from the 1st I.F.T.(T ₃₀₂ ~T ₃₀₄)	Best I.F. wave form
2.	O.S.C.	AM-generator 600 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	600 kHz	O.S.C. Coil T ₃₀₁	Maximum
3.	O.S.C.	AM-generator 1400 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	1400kHz	O.S.C. Trimmer TC ₃₀₂	Maximum
4.	Repeat 2 and 3						
5.	Antenna circuit	AM-generator 600 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	600 kHz	Ferrite bar Antenna coil T ₀₀₂	Maximum
6.	Antenna circuit	AM-generator 1400 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	1400kHz	Antenna circuit Trimmer TC ₃₀₁	Maximum
7.	Repeat 5 and 6						

AM IF CHARACTERISTIC



1. CURRENT ADJUSTMENT

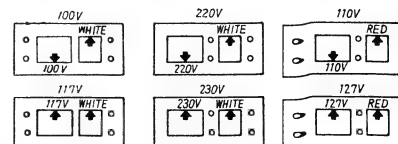
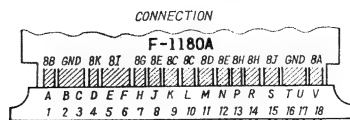
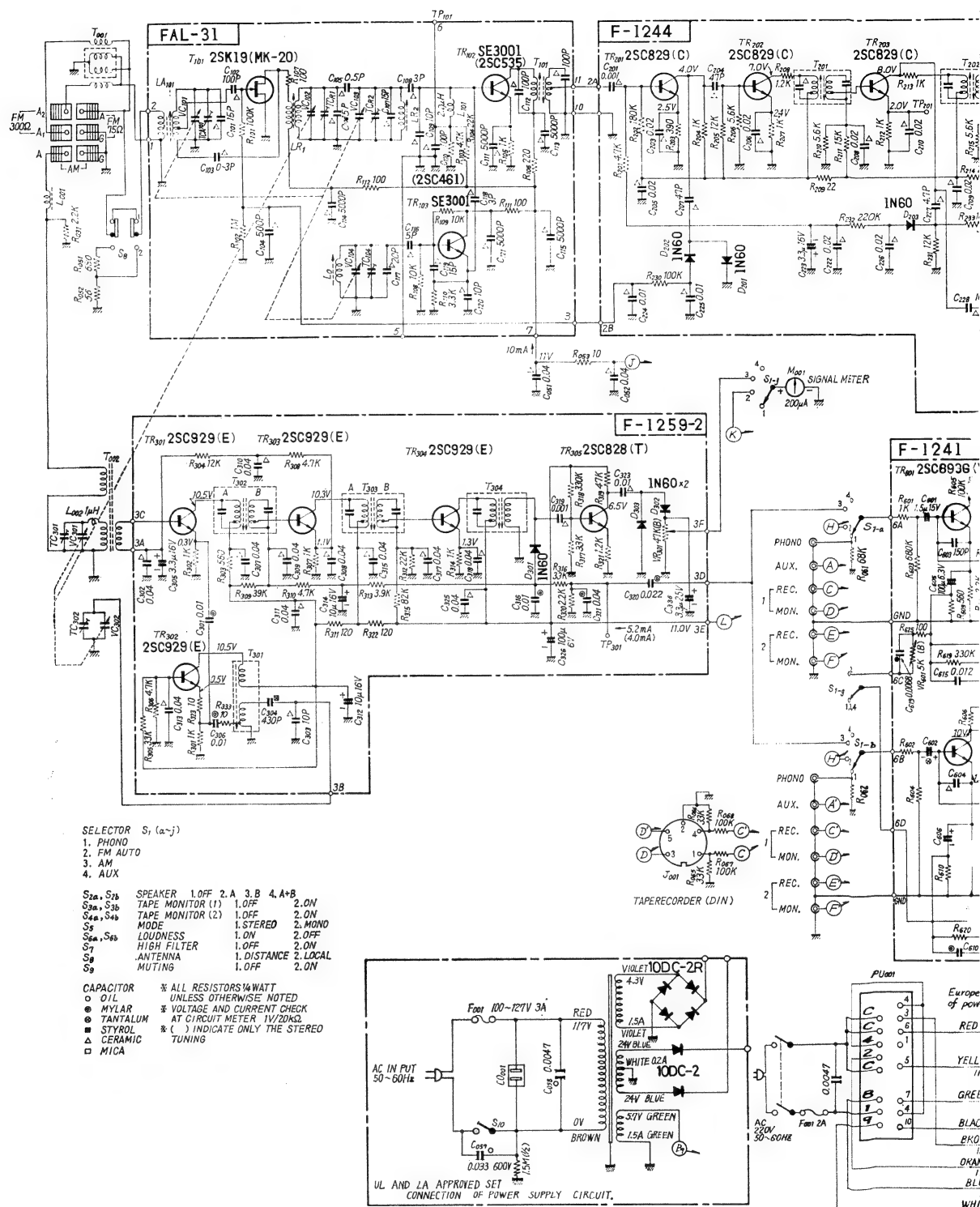
STEP	SETTING OF AMMETER (TESTER)	WHAT TO DO	NOTE
1.		Remove F_{002} and F_{003} .	Use an ammeter having 100 or 50mA range.
2.		Set VR_{802} and VR_{804} to minimum.	
3.		Set VR_{703} and VR_{704} (VOLUME) to minimum.	
4.		Push the POWER switch ON.	Be sure to switch on 1st and then connect the ammeter.
5.	100mA range.	Connect the ammeter to F_{002} as illustrated in Fig. 1.	
6.		Turn VR_{802} clockwise and adjust current to 15mA.	
7.	100mA range.	Push the POWER switch OFF and attach F_{002} in place.	
8.		Push the POWER switch ON and connect the ammeter to F_{003} as illustrated in Fig. 1.	
9.		Turn VR_{804} clockwise and adjust current to 15	
10.		Attach F_{003} in place.	



2. OUTPUT ADJUSTMENT

STEP	WHAT TO DO	NOTE
1.	Adjust the volume control to minimum.	
2.	Set an oscillator to 1,000Hz and connect it to the LEFT AUX input.	The oscillator used should have the oscillation frequency of 20 to 20,000Hz and the output voltage of more than 200mV.
3.	Set the SELECTOR switch to AUX.	
		BALANCE to CENTER TAPE MON to OFF MODE to STEREO TONE to CENTER Others to OFF
4.	Connect an 8- or 16-ohm load resistor having capacitor of more than 50 watts to the LEFT SPEAKER output.	
5.	Connect an oscilloscope to the SPEAKER terminal.	
6.	Push the POWER switch on and advance the volume little by little. Check the output at the terminal by means of the oscilloscope.	
7.	Adjust VR_{801} so that the fronts of sine wave are clipped simultaneously	
8.	Adjust the right channel as above. In Step 7, adjust VR_{803} .	

SCHEMATIC DIAGRAM



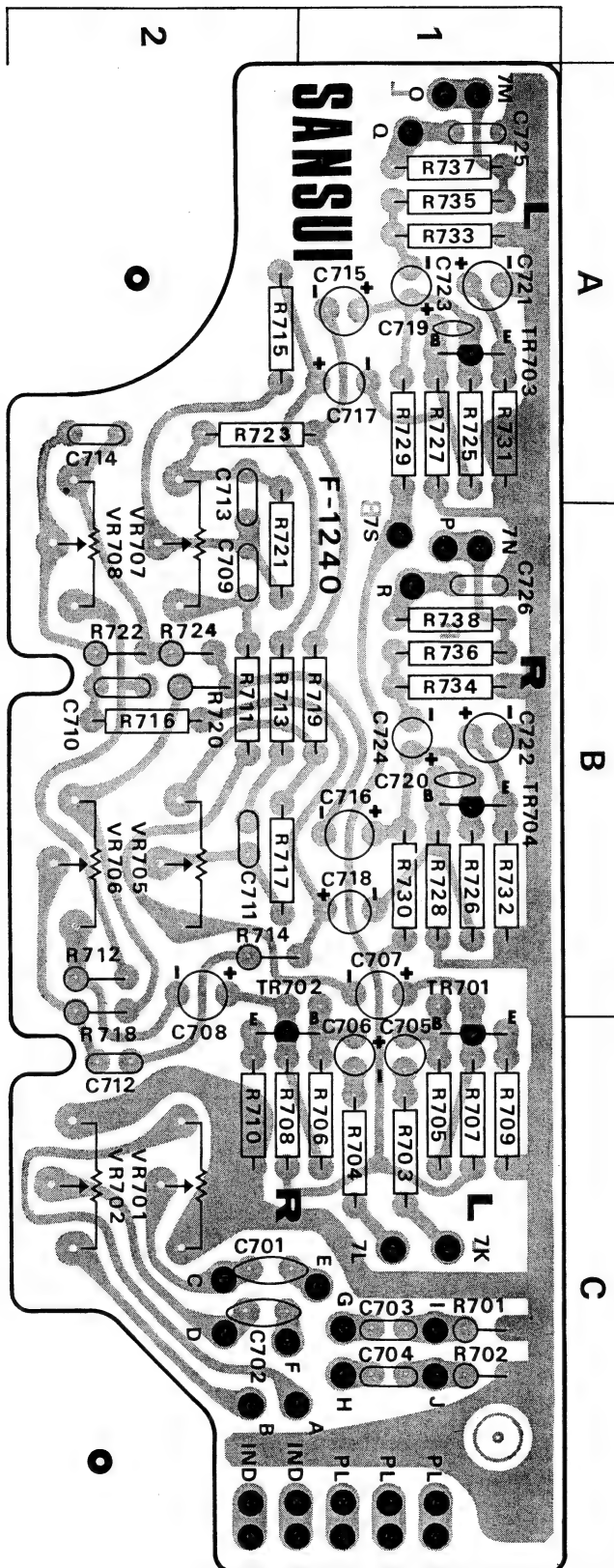
PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. Y: Parts Name Z: Position of Parts

TONE CONTROL BLOCK <F-1240>

X	Y	Z
R701	33k Ω	1 C
R702	33k Ω	1 C
R703	2.2k Ω	1 C
R704	2.2k Ω	1 C
R705	1M Ω	1 C
R706	1M Ω	1 C
R707	8.2k Ω	1 C
R708	8.2k Ω	2 C
R709	470 Ω	1 C
R710	470 Ω	2 C
R711	10k Ω	2 B
R712	10k Ω	2 B
R713	1k Ω	2 B
R714	1k Ω	2 B
R715	22k Ω	2 A
R716	22k Ω	2 B
R717	270k Ω	2 B
R718	270k Ω	2 B, C
R719	10k Ω	1 B
R720	10k Ω	2 B
R721	180k Ω	2 A, B
R722	180k Ω	2 B
R723	10k Ω	1, 2 A
R724	10k Ω	2 B
R725	470k Ω	1 A
R726	470k Ω	1 B
R727	150k Ω	1 A
R728	150k Ω	1 B
R729	5.6k Ω	1 A
R730	5.6k Ω	1 B
R731	560 Ω	1 A
R732	560 Ω	1 B
R733	82k Ω	1 A
R734	82k Ω	1 B
R735	2.2k Ω	1 A
R736	2.2k Ω	1 B
R737	820k Ω	1 A
R738	820k Ω	1 B
VR701, 702	250k Ω (MN) Balance Control (101040)	2 C
VR705, 706	100k Ω (B) \times 2 Treble Control (102004)	2 B
VR707, 708	100k Ω (B) \times 2 Bass Control (102004)	2 A, B
C701	150 pF } $\pm 10\%$ 50 WV Ceramic	2 C
C702	150 pF } Capacitor	2 C
C703	0.01 μ F } $\pm 10\%$ 50 WV Mylar	1 C
C704	0.01 μ F } Capacitor	1 C
C705	1 μ F } 50 WV Electrolytic	1 C
C706	1 μ F } Capacitor	1 C
C707	10 μ F } 25 WV Electrolytic	1 B
C708	10 μ F } Capacitor	2 B
C709	0.04 μ F }	2 B
C710	0.04 μ F }	2 B
C711	0.0015 μ F } $\pm 10\%$ 50 WV Mylar	2 B
C712	0.0015 μ F } Capacitor	2 C
C713	0.06 μ F }	2 A, B
C714	0.06 μ F }	2 A

X	Y	Z
C715	10 μ F }	1 A
C716	10 μ F }	1 B
C717	3.3 μ F }	1 A
C718	3.3 μ F }	1 B
C719	47 pF } $\pm 10\%$ 50 WV Ceramic	1 A
C720	47 pF } Capacitor	1 B
C721	33 μ F }	1 A
C722	33 μ F }	1 B
C723	3.3 μ F }	1 A
C724	3.3 μ F }	1 B
C725	0.02 μ F } $\pm 10\%$ 50 WV Mylar	1 A
C726	0.02 μ F }	1 B
TR701	2SC693F(Y) }	1 B
TR702	2SC693F(Y) }	1, 2 C
TR703	2SC693E(Y) }	1 A
TR704	2SC693E(Y) }	1 B



PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. Y: Parts Name Z: Position of Parts

EQUALIZER AMP BLOCK <F-1241>

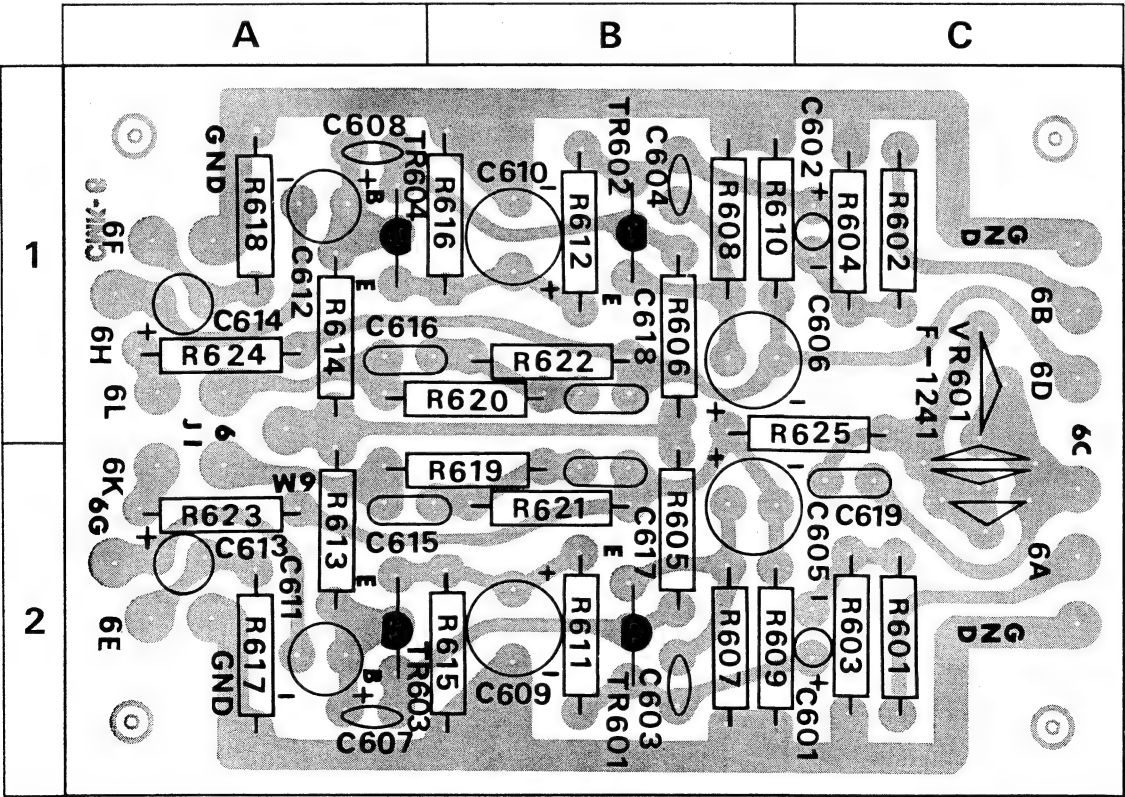
X	Y	Z
R601	1k Ω	2C
R602	1k Ω	1C
R603	680k Ω	2C
R604	680k Ω	1C
R605	100k Ω	2B
R606	100k Ω	1B
R607	2.2k Ω	2B
R608	2.2k Ω	1B
R609	560 Ω	2B
R610	560 Ω	1B
R611	390k Ω	2B
R612	390k Ω	1B
R613	5.6k Ω	2A
R614	5.6k Ω	1A
R615	680 Ω	2B
R616	680 Ω	1B
R617	82k Ω	2A
R618	82k Ω	1A
R619	330k Ω	2A, B
R620	330k Ω	1A, B
R621	22k Ω	2B
R622	22k Ω	1B
R623	15k Ω	2A
R624	15k Ω	1A
R625	100 Ω	1B, C

$\pm 10\%$ $\frac{1}{4}$ W Carbon Resistor

X	Y	Z
VR601	5k Ω (B) (103037)	1C
C601	1.5 μ F } 15 WV Tantalum	2C
C602	1.5 μ F } Capacitor	1C
C603	150 pF } $\pm 10\%$ 50 WV Ceramic	2B
C604	150 pF } Capacitor	1B
C605	100 μ F } 6.3 WV Electrolytic	2B, C
C606	100 μ F } Capacitor	1B, C
C607	150 pF } $\pm 10\%$ 50 WV Ceramic	2A
C608	150 pF } Capacitor	1A
C609	47 μ F } 6.3 WV Electrolytic	2B
C610	47 μ F } Capacitor	1B
C611	10 μ F } 25 WV Alum. Electrolytic	2A
C612	10 μ F } Capacitor	1A
C613	0.33 μ F } 25 WV Electrolytic	2A
C614	0.33 μ F } Capacitor	1A
C615	0.012 μ F } $\pm 10\%$ 50 WV Mylar	2A, B
C616	0.012 μ F } Capacitor	1A, B
C617	0.0033 μ F } $\pm 10\%$ 50 WV Mylar	2B
C618	0.0033 μ F } Capacitor	1B
C619	0.0068 μ F } $\pm 10\%$ 50 WV Mylar	2C
TR601	2SC693G(Y) }	2B
TR602	2SC693G(Y) }	1B
TR603	2SC693F(Y) }	2A
TR604	2SC693F(Y) }	1A

(030575-2)

(030575-1)



PRINTED CIRCUIT BOARDS AND PARTS LIST

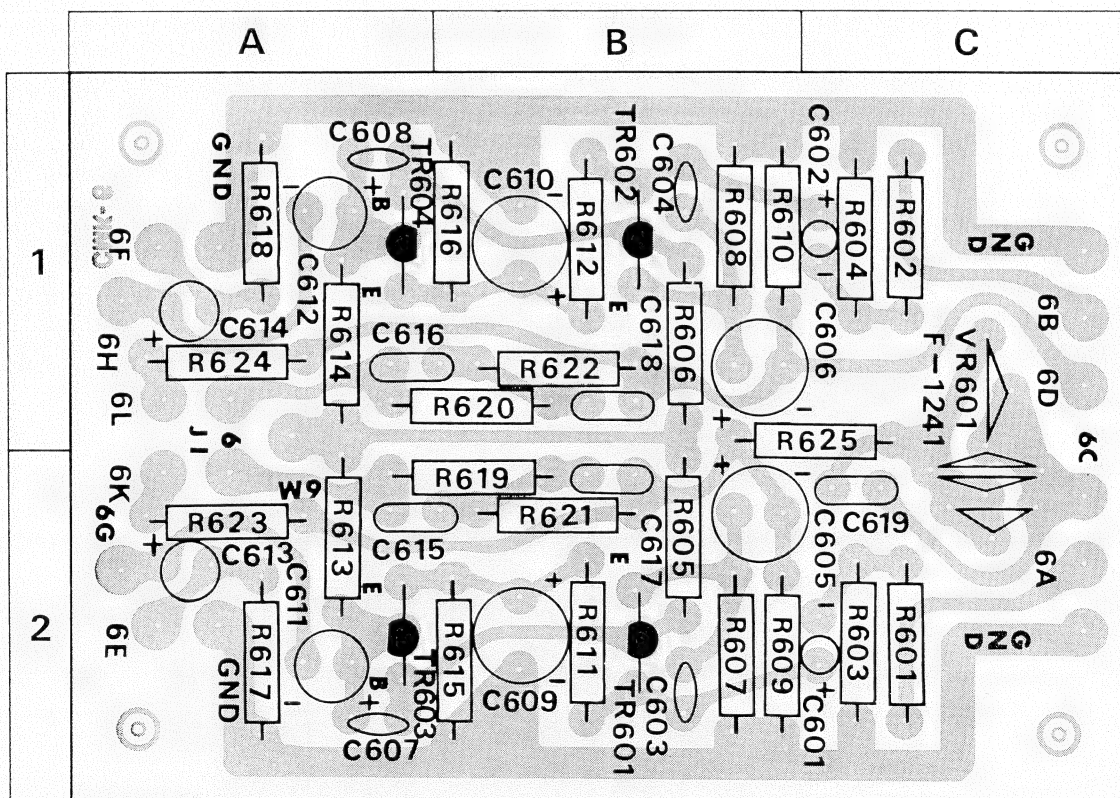
X: Parts No. Y: Parts Name Z: Position of Parts

EQUALIZER AMP BLOCK <F-1241>

X	Y	Z
R601	1k Ω	2 C
R602	1k Ω	1 C
R603	680k Ω	2 C
R604	680k Ω	1 C
R605	100k Ω	2 B
R606	100k Ω	1 B
R607	2.2k Ω	2 B
R608	2.2k Ω	1 B
R609	560 Ω	2 B
R610	560 Ω	1 B
R611	390k Ω	2 B
R612	390k Ω	1 B
R613	5.6k Ω	2 A
R614	5.6k Ω	1 A
R615	680 Ω	2 B
R616	680 Ω	1 B
R617	82k Ω	2 A
R618	82k Ω	1 A
R619	330k Ω	2 A, B
R620	330k Ω	1 A, B
R621	22k Ω	2 B
R622	22k Ω	1 B
R623	15k Ω	2 A
R624	15k Ω	1 A
R625	100 Ω	1 B, C

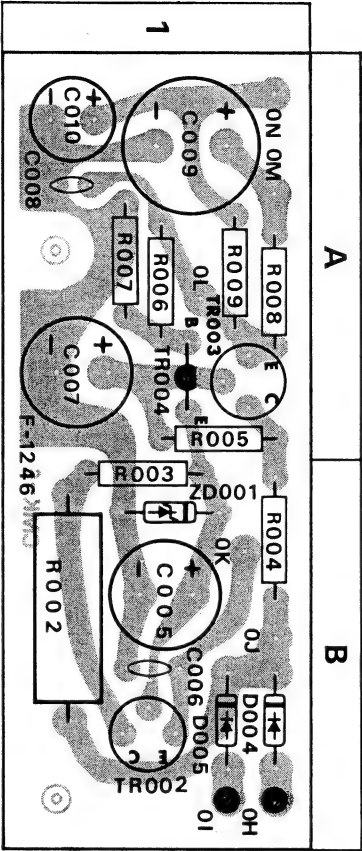
$\pm 10\%$ $\frac{1}{4}$ W Carbon Resistor

X	Y	Z
VR601	5k Ω (B) (103037)	1 C
C601	1.5 μ F } 15 WV Tantalum	2 C
C602	1.5 μ F } Capacitor	1 C
C603	150 pF } $\pm 10\%$ 50 WV Ceramic	2 B
C604	150 pF } Capacitor	1 B
C605	100 μ F } 6.3 WV Electrolytic	2 B, C
C606	100 μ F } Capacitor	1 B, C
C607	150 pF } $\pm 10\%$ 50 WV Ceramic	2 A
C608	150 pF } Capacitor	1 A
C609	47 μ F } 6.3 WV Electrolytic	2 B
C610	47 μ F } Capacitor	1 B
C611	10 μ F } 25 WV Alum. Electrolytic	2 A
C612	10 μ F } Capacitor	1 A
C613	0.33 μ F } 25 WV Electrolytic	2 A
C614	0.33 μ F } Capacitor	1 A
C615	0.012 μ F } $\pm 10\%$ 50 WV Mylar	2 A, B
C616	0.012 μ F } Capacitor	1 A, B
C617	0.0033 μ F } $\pm 10\%$ 50 WV Mylar	2 B
C618	0.0033 μ F } Capacitor	1 B
C619	0.0068 μ F } $\pm 10\%$ 50 WV Mylar	2 C
TR601	2SC693G(Y) }	2 B
TR602	2SC693G(Y) }	1 B
TR603	2SC693F(Y) }	2 A
TR604	2SC693F(Y) }	1 A



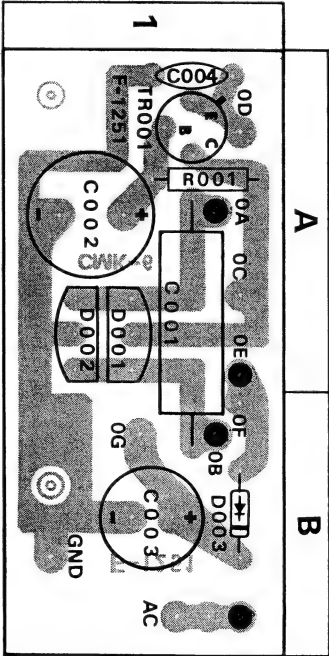
LIPPLE FILTER BLOCK <F-1246>

X	Y			Z
R002	560Ω	±10%	3W Cement Resistor	1 B
R003	1.5kΩ	±10%	¼W Carbon Resistor	1 B
R004	150Ω	±10%	½W Solid Resistor	1 B
R005	3.9kΩ	±10%	¼W Carbon Resistor	1 A
R006	8.2kΩ			1 A
R007	10kΩ			1 A
R008	220Ω			1 A
R009	470Ω			1 A
C005	330μF	16 WV	Electrolytic Capacitor	1 B
C006	0.01μF	+100% -0%	50 WV Ceramic Capacitor	1 B
C007	220μF	25 WV	Electrolytic Capacitor	1 A
C008	0.01μF	+100% -0%	50 WV Ceramic Capacitor	1 A
C009	330μF	25 WV	Electrolytic Capacitor	1 A
C010	100μF			1 A
TR002	2SC971(Y)	(030553, -1)		1 B
TR003	2SC971(Y)	(030553, -1)		1 A
TR004	2SC536(E)	(030515-4)		1 A
D004	S-05-01 or 10D-1	(031077) (031034)		1 B
D005	S-05-01 or 10D-1	(031077) (031034)		1 B
ZD001	ZB1-12	(031064-1)		1 B



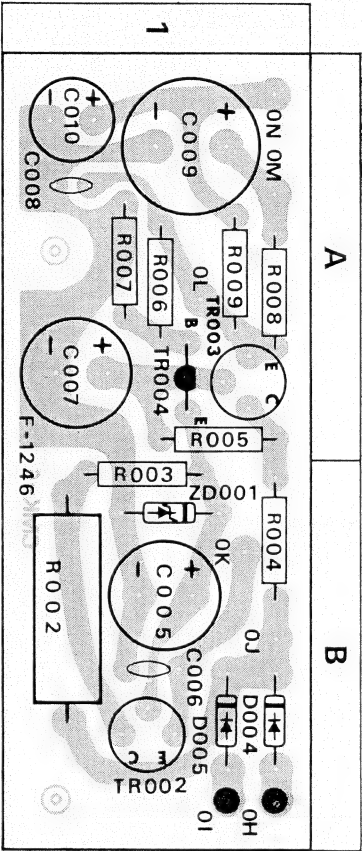
POWER BLOCK <F-1251>

X	Y			Z
R001	12kΩ	±10%	¼W Carbon Resistor	1 A
C001	0.0047μF	±10%	600WV Oil Capacitor	1 A, B
C002	100μF	75 WV	Electrolytic Capacitor	1 A
C003	330μF	10 WV	Electrolytic Capacitor	1 B
C004	0.01μF	500WV	Ceramic Capacitor	1 A
TR001	2SC627 (1~3)	(030558, -1, -2)		1 A
D001	10DC-2	(031080)		1 A
D002	10DC-2R	(031080-1)		1 A
D003	10D05	(0310880)		1 B



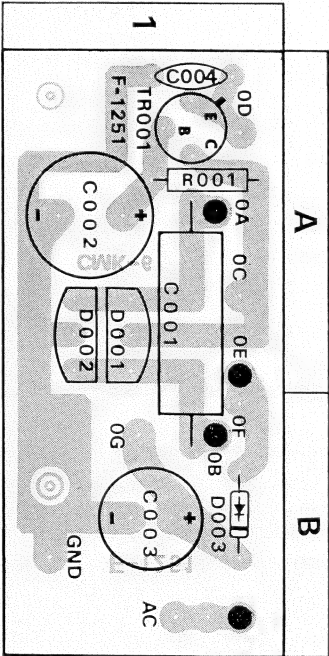
LIPPLE FILTER BLOCK <F-1246>

X	Y			Z
R002	560Ω	±10%	3W Cement Resistor	1 B
R003	1.5kΩ	±10%	¼W Carbon Resistor	1 B
R004	150Ω	±10%	½W Solid Resistor	1 B
R005	3.9kΩ	±10%	¼W Carbon Resistor	1 A
R006	8.2kΩ			1 A
R007	10kΩ			1 A
R008	220Ω			1 A
R009	470Ω			1 A
C005	330μF	16 WV	Electrolytic Capacitor	1 B
C006	0.01μF	+100% -0%	50 WV Ceramic Capacitor	1 B
C007	220μF	25 WV	Electrolytic Capacitor	1 A
C008	0.01μF	+100% -0%	50 WV Ceramic Capacitor	1 A
C009	330μF	25 WV	Electrolytic Capacitor	1 A
C010	100μF			1 A
TR002	2SC971(Y)	(030553, -1)		1 B
TR003	2SC971(Y)	(030553, -1)		1 A
TR004	2SC536(E)	(030515-4)		1 A
D004	S-05-01 or 10D-1	(031077) (031034)		1 B
D005	S-05-01 or 10D-1	(031077) (031034)		1 B
ZD001	ZB1-12	(031064-1)		1 B



POWER BLOCK <F-1251>

X	Y			Z
R001	12kΩ	±10%	¼W Carbon Resistor	1 A
C001	0.0047μF	±10%	600WV Oil Capacitor	1 A, B
C002	100μF	75 WV	Electrolytic Capacitor	1 A
C003	330μF	10 WV	Electrolytic Capacitor	1 B
C004	0.01μF	500WV	Ceramic Capacitor	1 A
TR001	2SC627 (1~3)	(030558, -1, -2)		1 A
D001	10DC-2	(031080)		1 A
D002	10DC-2R	(031080-1)		1 A
D003	10D05	(0310880)		1 B



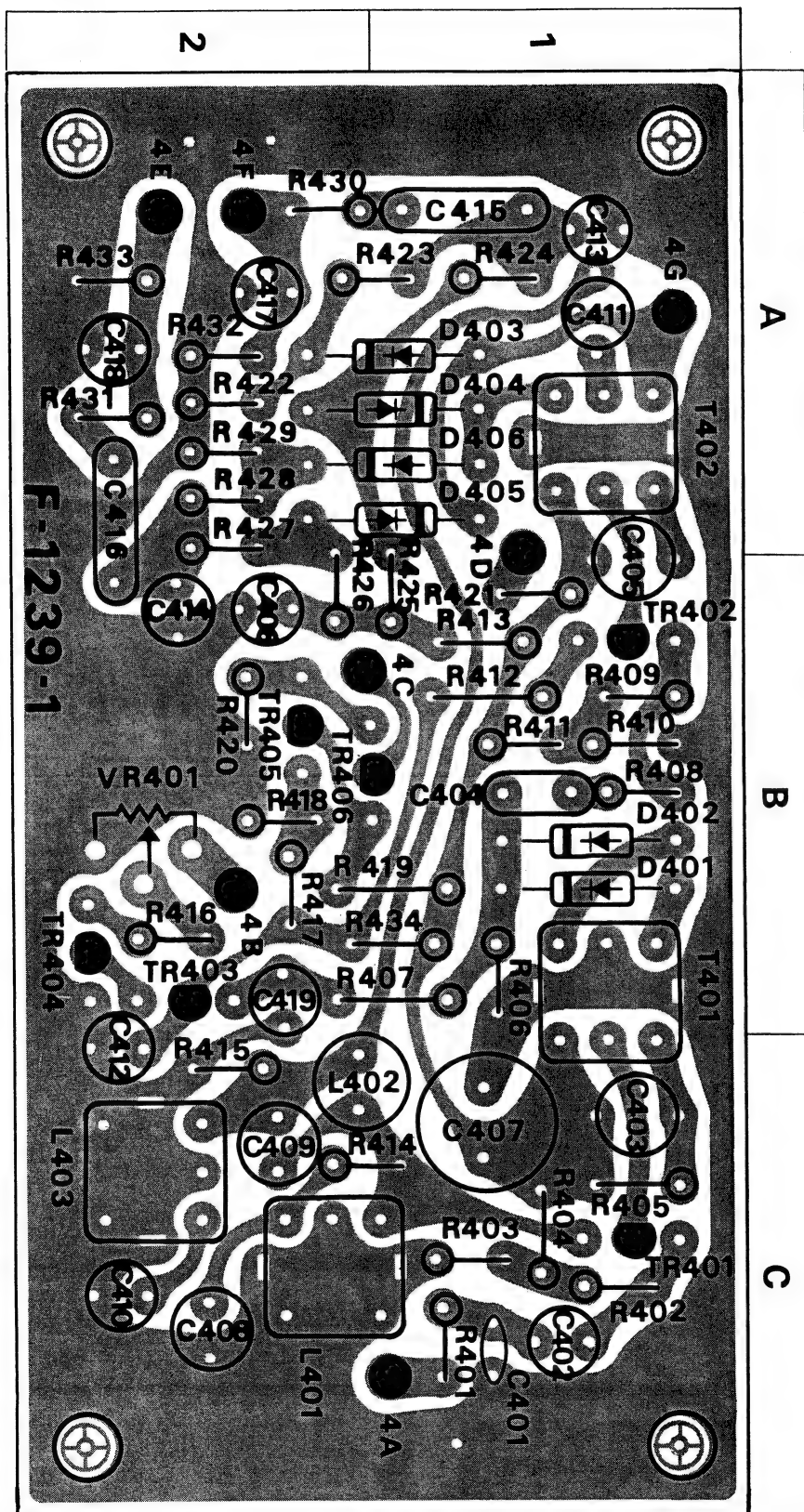
PRINTED CIRCUIT BOARDS AND PARTS LIST

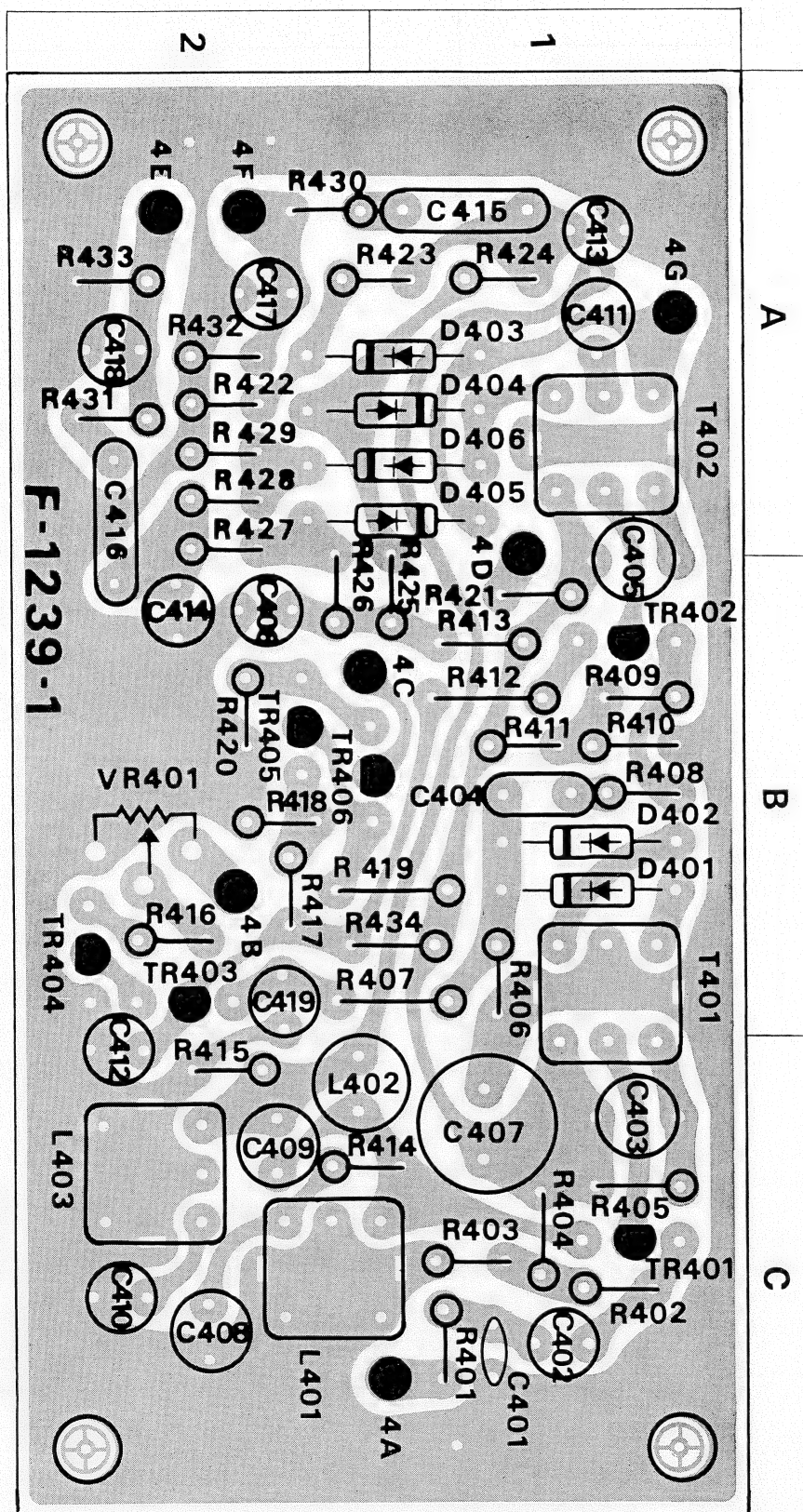
X: Parts No. Y: Parts Name Z: Position of Parts

FM MPX. BLOCK <F-1239-1E>

X	Y	Z
R401	1k Ω	1 C
R402	100k Ω	1 C
R403	15k Ω	1 C
R404	22k Ω	1 C
R405	68k Ω	1 C
R406	100k Ω	1 B
R407	100k Ω	1, 2 B
R408	4.7k Ω	1 B
R409	100k Ω	1 B
R410	2.2k Ω	1 B
R411	22k Ω	1 B
R412	330 Ω	1 B
R413	220k Ω	1 B
R414	47k Ω	1, 2 C
R415	2.2k Ω	2 C
R416	47k Ω	2 B
R417	22k Ω	2 B
R418	22k Ω	2 B
R419	3.3k Ω	1, 2 B
R420	4.7 Ω	2 B
R421	47 Ω	1 B
R422	220k Ω	2 A
R423	10k Ω	1, 2 A
R424	10k Ω	1 A
R425	220k Ω	1 B
R426	220k Ω	2 B
R427	10k Ω	2 A
R428	10k Ω	2 A
R429	220k Ω	2 A
R430	56k Ω	2 A
R431	56k Ω	2 A
R432	15k Ω	2 A
R433	15k Ω	2 A
R434	47k Ω	1, 2 B
VR401	200k Ω (B) Indicator Adjust (1032150)	2 B
C401	68 pF $\pm 10\%$ 50 WV Ceramic Capacitor	1 C
C402	10 μ F 10 WV Electrolytic Capacitor	1 C
C403	0.01 μ F $\pm 5\%$ 50 WV Styrol Capacitor	1 C
C404	0.022 μ F $\pm 10\%$ 50 WV Mylar Capacitor	1 B
C405	4700 pF $\pm 5\%$ 50 WV Styrol Capacitor	1 A, B
C406	1 μ F 50 WV Electrolytic Capacitor	2 B
C407	47 μ F 25 WV Electrolytic Capacitor	1 C
C408	0.01 μ F	2 C
C409	2200 pF $\pm 5\%$ 50 WV Styrol Capacitor	2 C
C410	270 pF	2 C
C411	10 μ F 25 WV Electrolytic Capacitor	1 A
C412	1 μ F 50 WV Electrolytic Capacitor	2 C
C413	680 pF $\pm 5\%$ 50 WV Styrol Capacitor	1 A
C414	680 pF	2 B
C415	0.15 μ F $\pm 10\%$ 50 WV Mylar Capacitor	1 A
C416	0.15 μ F	2 A
C417	6800 pF $\pm 5\%$ 50 WV Styrol Capacitor	2 A
C418	6800 pF	2 A
C419	1 μ F 50 WV Electrolytic Capacitor	2 A
TR401	2SC711 (F, G) (035732, 3)	1 C

X	Y	Z
TR402	(0305732, 3)	1 B
TR403	2SC711 F, G) (0305732, 3)	2 B
TR404	(0305732, 3)	2 B
TR405	2SC733 (Y) (0305371)	2 B
TR406	2SC735 (O, Y) (0305640, 1)	1, 2 B
D401	IN34A (0310400)	1 B
D402	IN34A (0310400)	1 B
D403	IN34A (0310401)	1 A
D404	IN34A (Y) (0310401)	1 A
D405	IN34A (Y) (0310401)	1 A
D406	IN34A (Y) (0310401)	1 A
T401	19kHz Coil (4240580)	1 B
T402	38kHz Coil (4240600)	1 A
L401	19kHz Coil (4240590)	2 C
L402	Micro Inductor (4900100)	1, 2 C
L403	67kHz Coil (4240410)	2 C





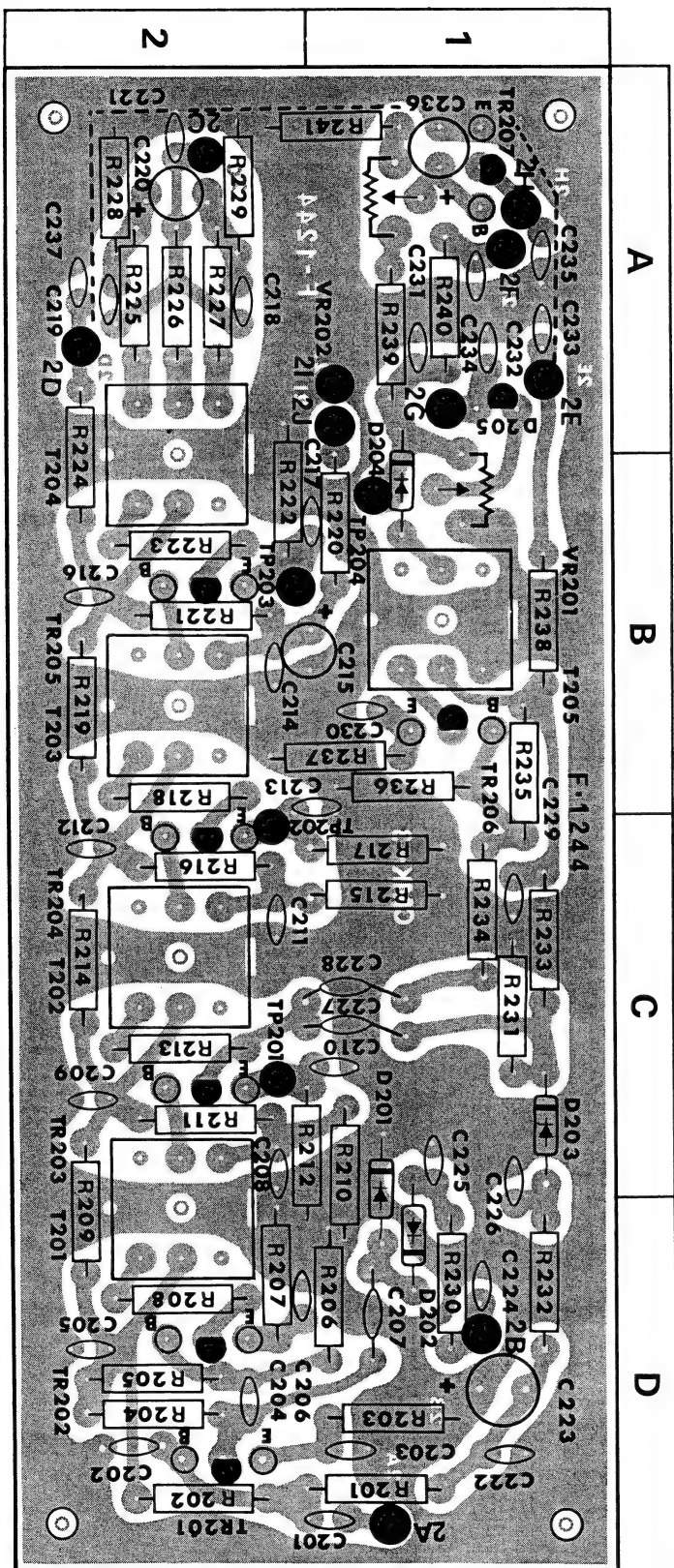
PRINTED CIRCUIT BOARDS AND PARTS LIST

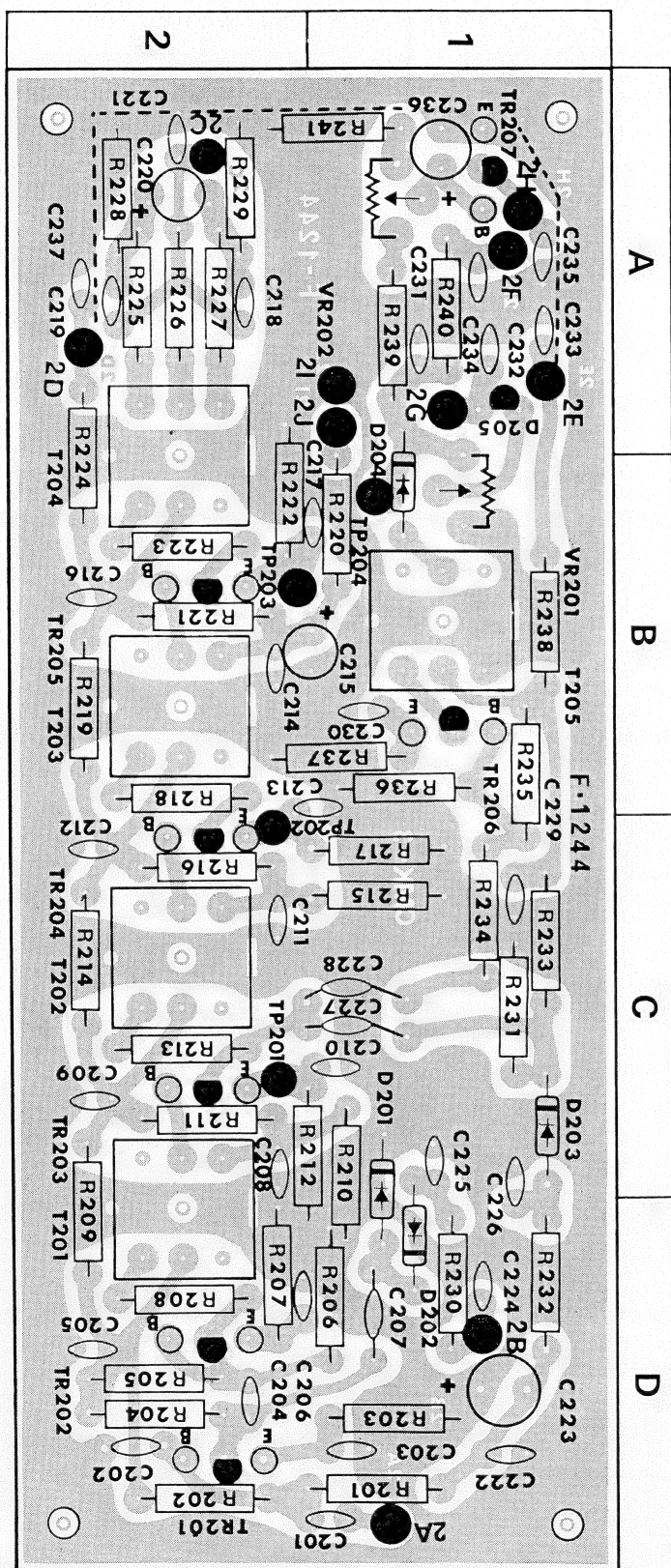
X: Parts No. Y: Parts Name Z: Position of Parts

FM IF BLOCK <F-1244>

X	Y	Z
R201	4.7k Ω	1, 2 D
R202	180k Ω	2 D
R203	390 Ω	1 D
R204	1k Ω	2 D
R205	12k Ω	2 D
R206	5.6k Ω	1 D
R207	1k Ω	2 D
R208	1.2k Ω	2 D
R209	22 Ω	2 C, D
R210	5.6k Ω	1 C, D
R211	15k Ω	2 C
R212	1k Ω	2 C, D
R213	1k Ω	2 C
R214	22 Ω	2 C
R215	5.6k Ω	1 C
R216	15k Ω	2 C
R217	1k Ω	1 C
R218	680 Ω	2 B
R219	22 Ω	2 B
R220	6.8k Ω	1 A, B
R221	10k Ω	2 B
R222	1k Ω	2 A, B
R223	1k Ω	2 B
R224	22 Ω	2 A, 2 B
R225	1k Ω	2 A
R226	68 Ω	2 A
R227	1k Ω	2 A
R228	10k Ω	2 A
R229	10k Ω	2 A
R230	100k Ω	1 D
R231	12k Ω	1 C
R232	220k Ω	1 D
R233	100k Ω	1 C
R234	10 Ω	1 C
R235	22k Ω	1 B, C
R236	10k Ω	1 B
R237	1k Ω	1, 2 B
R238	22 Ω	1 B
R239	3.9k Ω	1 A
R240	3.9k Ω	1 A
R241	10k Ω	1, 2 A
VR201	50k Ω (B) Tuning Meter Adjustor(103020)	1 B
VR202	100k Ω (B) Muting Adjustor (103034)	1 A
C201	1000 pF } +80% 25 WV Ceramic	1, 2 D
C203	0.02 μ F } -20% Capacitor	1 D
C204	47 pF \pm 10% 50 WV Ceramic	2 D
	Capacitor	
C205	0.02 μ F } +80% 25 WV Ceramic	2 D
C206	0.02 μ F } -20% Capacitor	2 D
C207	47 pF \pm 10% 50 WV Ceramic	1 D
	Capacitor	
C208	0.02 μ F	2 C
C209	0.02 μ F	2 C
C210	0.02 μ F } +80% 25 WV Ceramic	1 C
C211	0.02 μ F } -20% Capacitor	2 C

X	Y	Z
C212	0.02 μ F } +80% 25 WV Ceramic	2 C
C213	0.02 μ F } -20% Capacitor	1, 2 B
C214	0.02 μ F	2 B
C215	1 μ F 50 WV Electrolytic	1, 2 B
	Capacitor	
C216	0.02 μ F } +80% 25 WV Ceramic	2 B
C217	0.02 μ F } -20% Capacitor	1, 2 B
C218	220 pF \pm 10% 50 WV Ceramic	2 A
C219	220 pF	2 A
C220	10 μ F 10 WV Electrolytic	2 A
	Capacitor	
C221	220 pF \pm 10% 50 WV Ceramic	2 A
	Capacitor	
C222	0.02 μ F } +80% 25 WV Ceramic	1 D
	-20% Capacitor	
C223	3.3 μ F 16 WV Electrolytic	1 D
	Capacitor	
C224	0.01 μ F	1 D
C225	0.01 μ F } +80% 25 WV Ceramic	1 C
C226	0.02 μ F } -20% Capacitor	1 C, D
C227	4.7 pF \pm 10% 50 WV Ceramic	1 C
C228	10 pF	1 C
C229	0.02 μ F	1 C
C230	0.02 μ F	1 B
C231	0.02 μ F	1 A
C232	0.02 μ F } +80% 25 WV Ceramic	1 A
C233	0.02 μ F } -20% Capacitor	1 A
C234	0.02 μ F	1 A
C235	0.04 μ F	1 A
C236	1 μ F 50 WV Electrolytic	1 A
	Capacitor	
C237	0.04 μ F } +80% 25 WV Ceramic	2 A
	-20% Capacitor	
TR201	25C829(C)	2 D
TR202	25C829(C)	2 D
TR203	25C829(C)	2 C
TR204	25C829(C)	(030546-1) 2 C
TR205	25C829(C)	2 B
TR206	25C829(C)	1 B
TR207	25C828(T)	(030527) 1 A
D201	IN60	1 C, D
D202	IN60	1 C, D
D203	IN60	(031033, -1) 1 C
D204	IN60	1 A, B
D205	DS410	(034003) 1 A
T201	FM IFT	2 C, D
T202	FM IFT 10.7MHz	(423543) 2 C
T203	FM IFT 10.7MHz	(423542) 2 B
T204	FM Detector 10.7MHz	(423518) 2 A, B
T205	FM Meter Transformer	(423529) 1 B





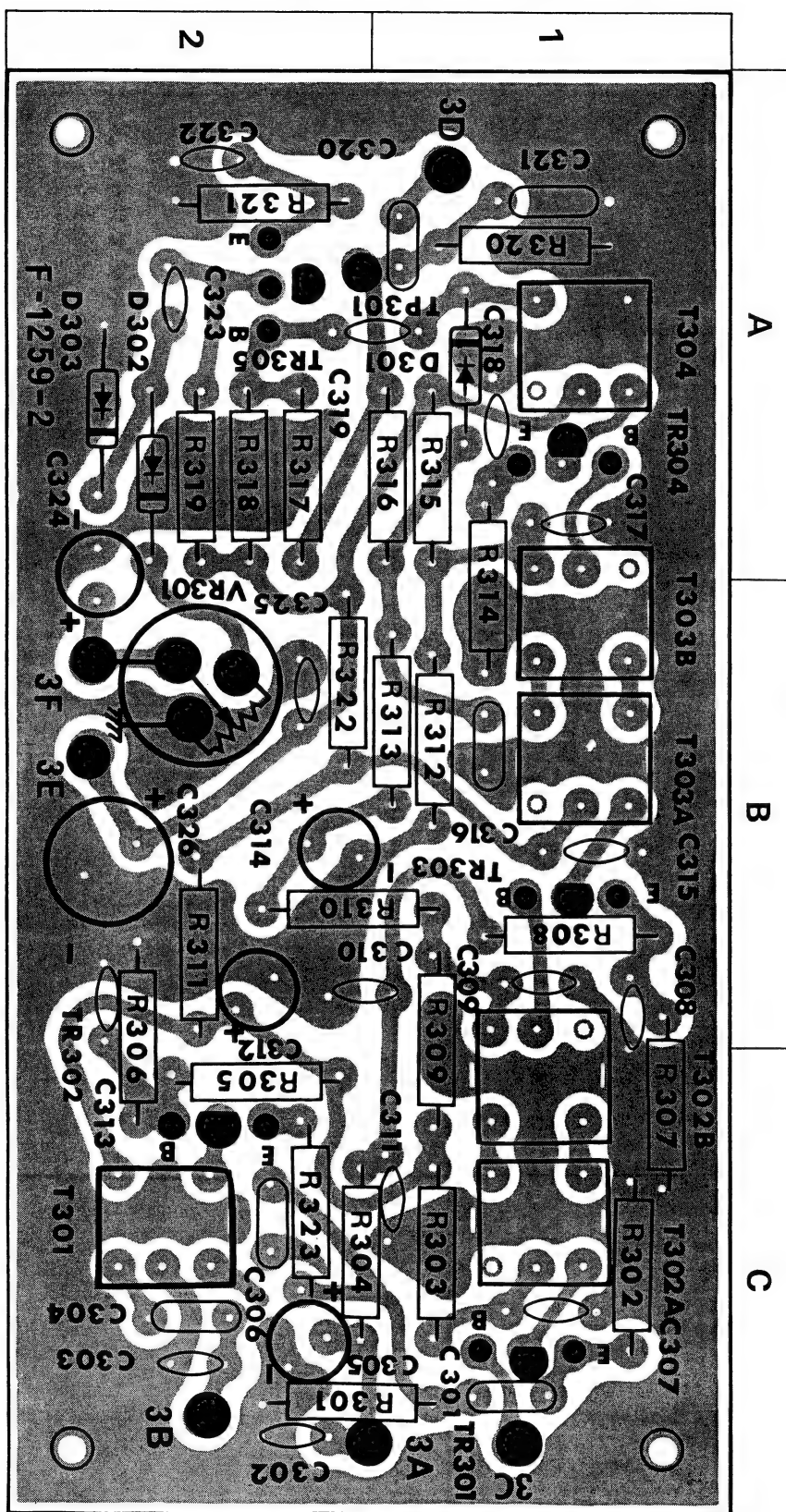
PRINTED CIRCUIT BOARDS AND PARTS LIST

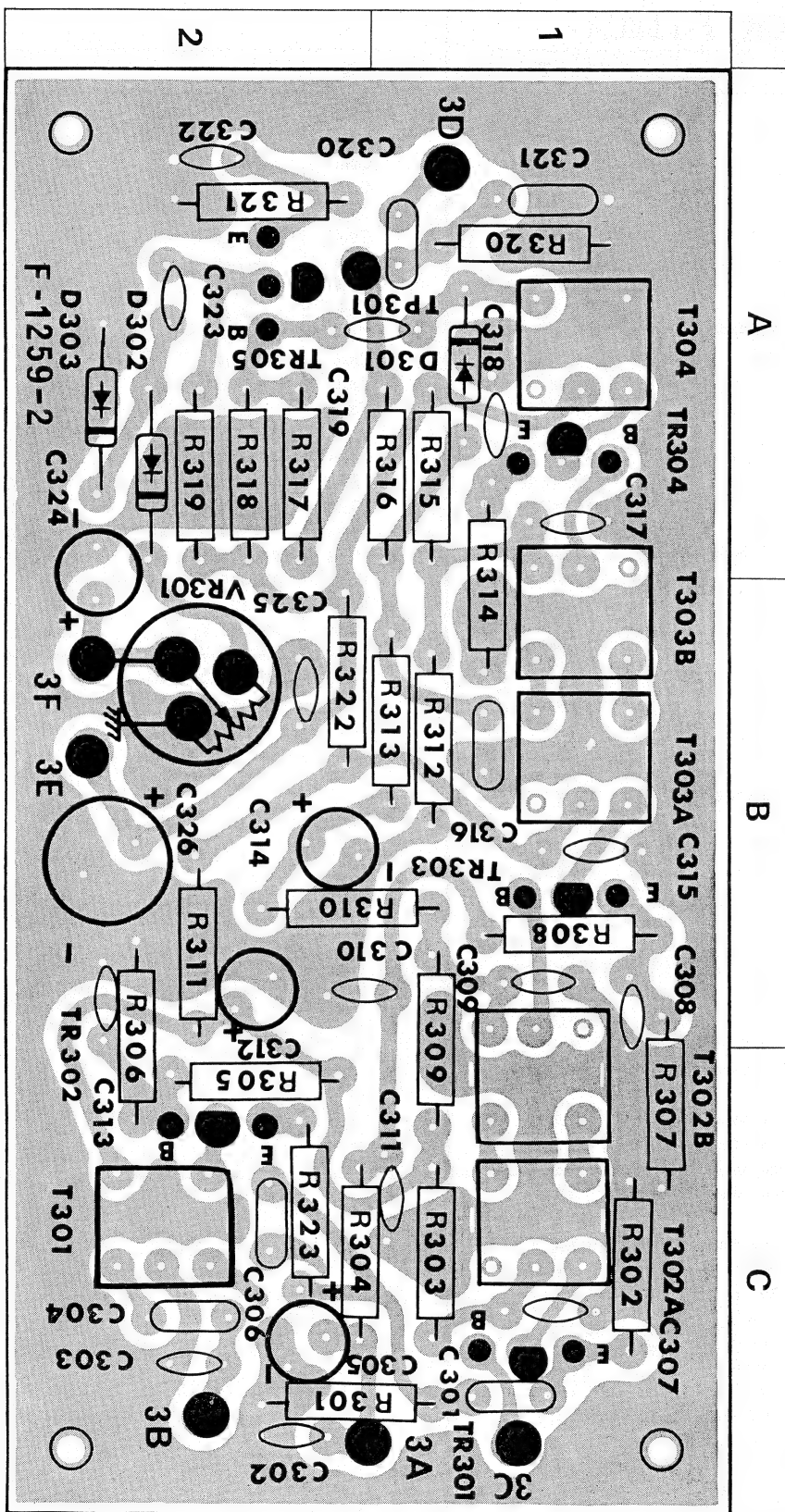
X: Parts No. Y: Parts Name Z: Position of Parts

AM IF BLOCK <F-1259-2>

X	Y	Z
R301	1k Ω	1, 2 C
R302	1k Ω	1 C
R303	560 Ω	1 C
R304	12k Ω	2 C
R305	39k Ω	2 C
R306	4.7k Ω	2 B, C
R307	1k Ω	1 B, C
R308	4.7k Ω	1 B
R309	39k Ω	1 B, C
R310	4.7k Ω	1, 2 B
R311	120 Ω	2 B
R312	22k Ω	1 B
R313	3.9k Ω	1 B
R314	1k Ω	1 A, B
R315	82k Ω	1 A
R316	33k Ω	1 A
R317	33k Ω	2 A
R318	330k Ω	2 A
R319	4.7k Ω	2 A
R320	2.2k Ω	1 A
R321	1.2k Ω	2 A
R322	120 Ω	2 B
R323	10 Ω	2 C
VR301	47k Ω (B) (103517)	2 B
C301	0.01 μ F $\pm 10\%$ 50 WV Mylar Capacitor	1 C
C302	0.04 μ F $\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}$ 25 WV Ceramic Capacitor	2 C
C303	10pF $\pm 10\%$ 50 WV Ceramic Capacitor	2 C
C304	430pF $\pm 5\%$ 125WV Styrol Capacitor	2 C
C305	3.3 μ F 16 WV Electrolytic Capacitor	2 C
C306	0.01 μ F $\pm 10\%$ 50 WV Mylar Capacitor	2 C
C307	0.04 μ F	1 C
C308	0.04 μ F	1 B
C309	0.04 μ F $\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}$ 25 WV Ceramic Capacitor	1 B
C310	0.04 μ F	1, 2 B
C311	0.04 μ F	1 C
C312	10 μ F 16 WV Electrolytic Capacitor	2 B
C313	0.04 μ F $\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}$ 25 WV Ceramic Capacitor	2 B
C314	10 μ F 16 WV Electrolytic Capacitor	1, 2 B
C315	0.04 μ F $\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}$ 25 WV Ceramic Capacitor	1 B
C316	0.01 μ F $\pm 10\%$ 50 WV Mylar Capaitor	1 B
C317	0.04 μ F	1 A
C318	0.04 μ F $\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}$ 25 WV Ceramic Capacitor	1 A, 1 B
C319	0.001 μ F	1, 2 A
C320	0.022 μ F	1 A
C321	0.04 μ F $\pm 10\%$ 50 WV Mylar Capacitor	1 A
C323	0.01 μ F $\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}$ 25 WV Ceramic Capacitor	2 A
C324	3.3 μ F 25V Electrolytic Capacitor	2 A, B
C325	0.04 μ F $\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}$ 25 WV Ceramic Capacitor	2 B
C326	100 μ F 16 WV Electrolytic Capacitor	2 B

X	Y	Z
TR301	2SC929 (C~E) (030572-1~3)	1 C
TR302	2SC929 (D) (030572-2)	2 C
TR303	2SC929 (C~E) (030572-1~3)	1 B
TR304	2SC929 (C~E) (030572-1~3)	1 A
TR305	2SC828 (T) (030527)	2 A
D301	IN60	1, 2 A
D302	IN60	(031033, -1) 2 A
D303	IN60	2 A
T301	AM OSC (422023)	2 C
T302(A)	AM IFT 455kHz (423030)	1 C
T302(B)	AM IFT 455kHz (423031)	1 B, C
T303(A)	AM IFT 455kHz (423030)	1 B
T303(B)	AM IFT 455kHz (423031)	1 A, B
T304	AM IFT 455kHz (423041)	1 A





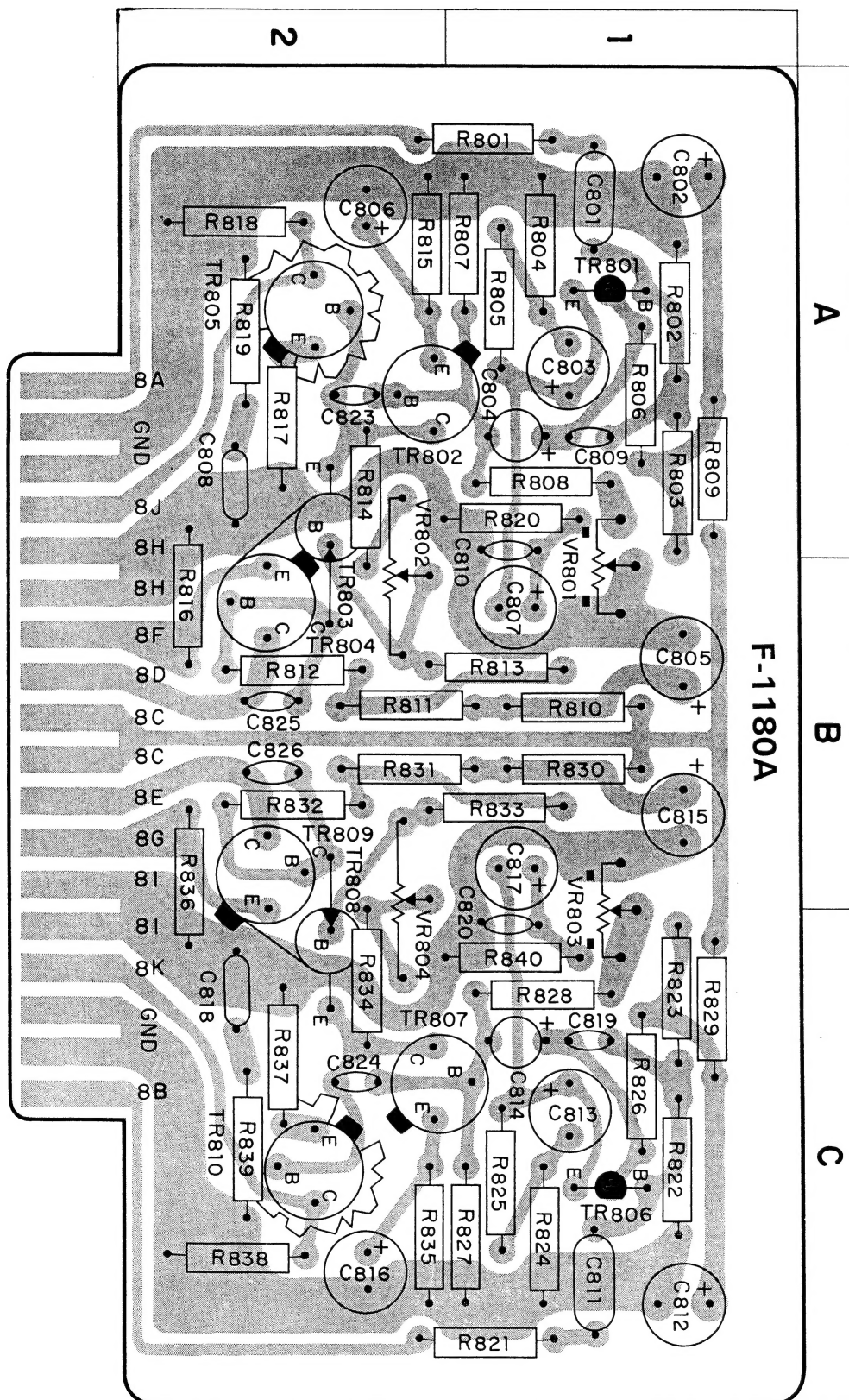
PRINTED CIRCUIT BOARDS AND PARTS LIST

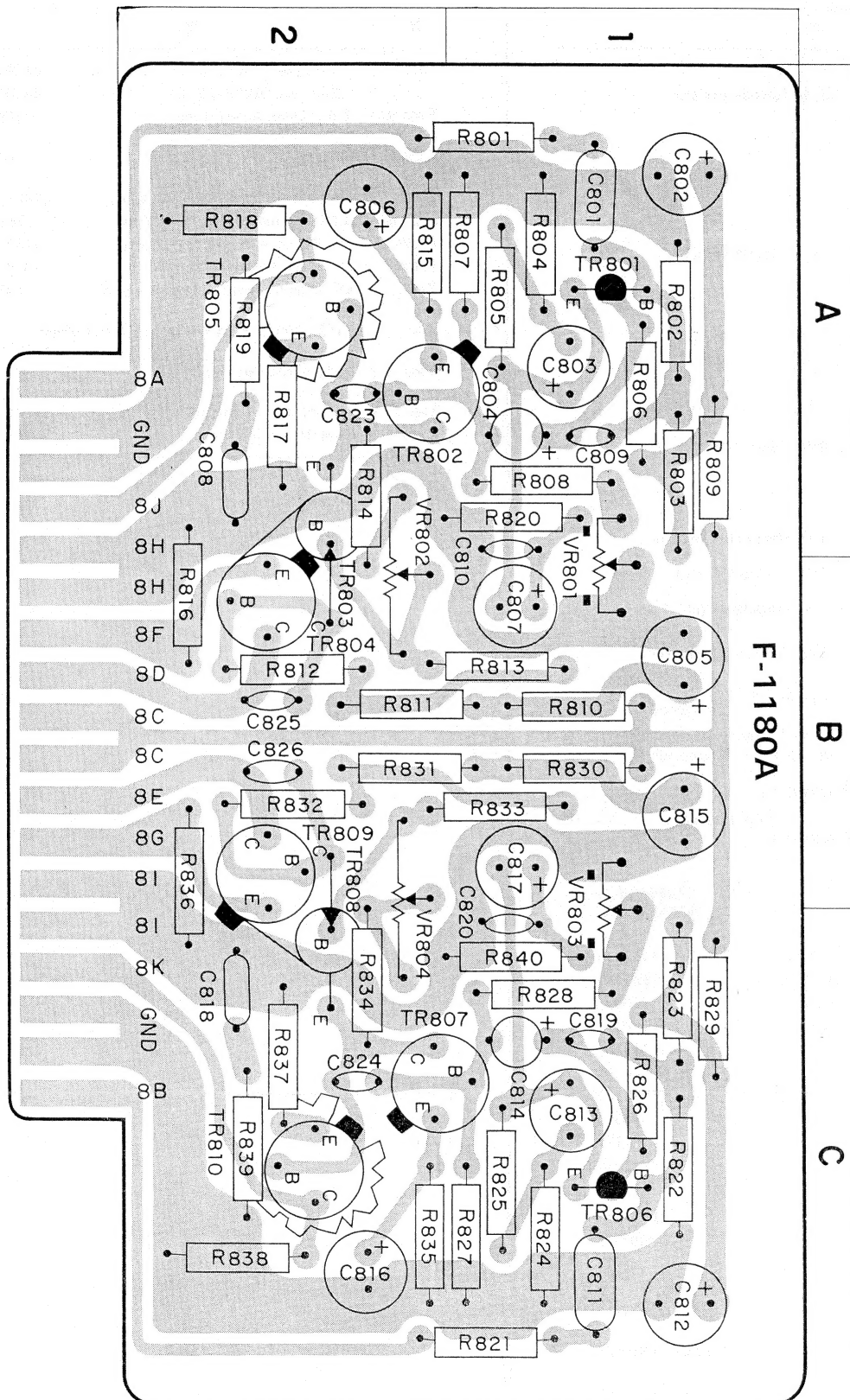
X: Parts No. Y: Parts Name Z: Position of Parts

DRIVER AMP BLOCK <F-1180A>

X	Y	Z
R801	2.2k Ω	1, 2 A
R802	150k Ω	1 A
R803	560k Ω	1 A
R804	1k Ω	1 A
R805	3.3k Ω	1 A
R806	3.3k Ω	1 A
R807	10k Ω	1 A
R808	47k Ω	1 A
R809	56k Ω	1 A
R810	1.8k Ω	1 B
R811	3.9k Ω	1, 2 B
R812	39 Ω	2 B
R813	3.3k Ω	1, 2 B
R814	1.5k Ω	2 A, B
R815	220 Ω	2 A
R816	220 Ω	2 A, B
R817	39 Ω	2 A
R818	220 Ω	2 A
R819	10 Ω	2 A
R820	22k Ω	1 A
R821	2.2k Ω	1, 2 C
R822	150k Ω	1 C
R823	560k Ω	1 C
R824	1k Ω	1 C
R825	3.3k Ω	1 C
R826	3.3k Ω	1 C
R827	10k Ω	1 C
R828	47k Ω	1 C
R829	56k Ω	1 C
R830	1.8k Ω	1 B
R831	3.9k Ω	1, 2 B
R832	39 Ω	2 B
R833	3.3k Ω	1, 2 B
R834	1.5k Ω	2 C
R835	220 Ω	2 C
R836	220 Ω	2 B, C
R837	39 Ω	2 C
R838	220 Ω	2 C
R839	10 Ω	2 C
R840	22k Ω	1, 2 C
VR801	200k Ω (B) AC Balance Adjustor (103015)	1 A, B
VR802	1k Ω (B) DC Balance Adjustor (103069)	2 A, B
VR803	200k Ω (B) AC Balance Adjustor (103015)	1 B, C
VR804	1k Ω (B) DC Balance Adjustor (103069)	2 B, C
C801	0.22 μ F $\pm 10\%$ 50 WV Mylar Capacitor	1 A
C802	100 μ F 25 WV	1 A
C803	220 μ F 10 WV	1 A
C804	10 μ F 25 WV	1 A
C805	33 μ F 50 WV	1 B
C806	100 μ F 6.3 WV	2 A
C807	3.3 μ F 50 WV	1 B
C808	0.047 μ F $\pm 10\%$ 50 WV Mylar Capacitor	2 A
C809	33 pF $\pm 10\%$ 50 WV Ceramic	1 A
C810	33 pF Capacitor	1 A
C811	0.22 μ F $\pm 10\%$ 50 WV Mylar Capacitor	1 C

X	Y	Z
C812	100 μ F 25 WV	1 C
C813	200 μ F 10 WV	1 C
C814	10 μ F 25 WV	1 C
C815	33 μ F 50 WV	1 B
C816	100 μ F 6.3 WV	2 C
C817	3.3 μ F 50 WV	1 B
C818	0.047 μ F $\pm 10\%$ 50 WV Mylar Capacitor	2 C
C819	33 pF	1 C
C820	33 pF	1 C
C823	33 pF $\pm 10\%$ 50 WV Ceramic	2 A
C824	33 pF Capacitor	2 C
C825	330 pF	2 B
C826	330 pF	2 B
TR801	2SC458LG(B) (030531)	1 A
TR802	2SC627(2) (030558-1)	2 A
TR803	2SC281(B) (030512-1)	2 A, B
TR804	2SC959 (K, L, M) (0305741,2,3)	2 B
TR805	2SA606 (K, L, M) (0300211,2,3)	2 A
TR806	2SC458LG(B) (030531)	1 C
TR807	2SC627(2) (030558-1)	1, 2 C
TR808	2SC281(B) (030512-1)	2 B, C
TR809	2SC959 (K, L, M) (0305741,2,3)	2 B, C
TR810	2SA606 (K, L, M) (0300211,2,3)	2 C





OTHER PARTS AND THEIR POSITION ON CHASSIS

X: Parts No. Y: Parts Name

X	Y
R031	2.2k Ω
R051	56 Ω
R052	680 Ω
R053	10 Ω
R061	68k Ω
R062	68k Ω
R063	12k Ω
R064	12k Ω
R065	33k Ω
R066	33k Ω
R067	100k Ω
R068	100k Ω
R069	820k Ω
R070	820k Ω
R071	0.5 Ω
R072	0.5 Ω
R073	0.5 Ω
R074	0.5 Ω
R075	330 Ω
R076	330 Ω
R077	560 Ω
R078	560 Ω
R079	18 Ω
VR703, 704	250k Ω (B) \times 2 Volume, Variable Resistor
C051	0.04 μ F
C052	0.04 μ F
C053	2200 μ F
C054	2200 μ F
C055	2200 μ F
C056	1000 μ F
C057	0.033 μ F
C058	0.0047 μ F
C059	0.068 μ F
C060	0.068 μ F
TR051~054	2SD260 or 2SC494 (R, Y, BL)
S1	Selector Switch Y-4-10-4
S2	Speaker Selector Switch Y-1-4-4
S3	Tape Monitor (1) Switch
S4	Tape Monitor (2) Switch
S5	Mode Switch
S6	Loudness Switch
S7	High Filter Switch
S8	Antenna Att. Switch
S9	Muting Switch
S10	Power Switch
J001	DIN Connector
J002	Headphones Jack
J003	Multi Connector
M001	Tuning Meter
PT001	Power Transformer
PU001	Voltage Selector

X	Y
F001	3A Fuse (100~127V)
	2A Fuse (220~250V)
F002,003	2.5A Quick Acting Fuse
CO001	AC Outlet
PL001	7V 200mA Phono Indicator Lamp
PL002~007	6.3V 250mA Pilot Lamp F Type
PL008	7V 200mA AUX Indicator Lamp
PL009	5V 60mA Needle Indicator
PL010	6V 100mA Stereo Indicator Lamp
T001	75 Ω : 300 Ω High Frequency Transformer
T002	220 μ H AM Bar Antenna
L001	150 μ H Ferri Inductor
L002	1 μ H Micro Inductor

* Design and specifications subject to change without notice for improvements.

